73

Examples

Echelle	6619Å	300ln/mm	7600Å blazed	+ Apr 13/14/93 MAY 29/93
Echelle	6430Å	300ln/mm		Apr 15/93
"	5130Å	600ln/mm		Apr 12/93
"	4660Å	600ln/mm	~~4000~~ 5000Å blazed	Apr 12/13/93

Echelle Flexure Tests Apr 8/9/93

13

pectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions 4

ocus .....

pectr. Temp. ..... Dome Temp./Hum. .....

xp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality

David Dunlap Observatory
74" Logbook
Vol. 73
Plate Nos. 12718 - 15028
March 1993 - June 1993

pg#4 ...contd. 5

Date 1993 MAR 18/19 Observers Hdy/Tn/Fbr

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc12718	BD +18° 2307	09 56 11	+17 53 27	020306					410s
12719	"			021015					"
12720	"			02 1723					"
12721	"			02 24 32					"
2	BIAS(4)								
3	FLAT							Tung A-1/2	7s
4	COMP							Feat clear	60s
5	BD +18° 2307			02 36 04					410s
6	"			02 43 13					
7	"			02 50 22					
8	"			02 57 31					
9	"			03 04 40					
12730				03 12 03					
1				03 19 12					
2				03 26 21					

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions 6

Focus ..... LOG BOOK 73

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
		+9.4 -9.9	KO[illegible]	CASS CCD	1800 0=6035	250μ	6563A	19ci	Hdy pgm		
			KO[illegible]							X=1.6884	
										12-31	

pg#5 7

Date 1993 MAR. 18/19 Observers Hay/Tn/Fbr

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
12733	COMP							FeAr clear	60s
4	FLAT							TUNG D=47	7s
5	BIAS(4)								
6	BD+18°2307			03 37 39					41s
7	"			03 44 48					
8	"			03 51 57					
9	"			03 59 36					
12740	"			04 06 45		05 44W			
1	"			04 13 54					
2	"			04 21 03					
3	COMP							FeAr Clear	
4	FLAT AT BD+18°2307							Tung A=1/2	8sec
5	BIAS(4)								
6	COMP AT HD177724							FeAr Clear	60sec
47	HD177724	19 00 49	+13 42 53	04 39 34		02 52E			149s

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions . Hazy 8

Focus ... 6.92 .....

Spectr. Temp. ..... Dome Temp./Hum. -11.3°C 77%H

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
					1800 l/mm G=6035	250u	6563Å				
										10K mag	
								25c;	Hg pgm		
	6"									in the pine trees	
										SKY ONLY?	
								27c;			
								26c;			
								28c;	Telluric Std	AIR MASS 1.48	

9 Pg #6

Date 1993 MAR 18/19... Observers Hdg/LF&r/TG.....

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC12748	HD177724	19 00 49	+13 42 53	04 42 41					
49	Comp							FeAr Clear	60s
→ 50 52	FLATS x 3							TungAp=1/2	9cs
53	BIAS(4)								

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions . Hazy 10

Focus ... 6.92 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
		V 2.99	AOIIIn			250u	6563Å	29c	Telluric Std	8864 HOH max	
								30c;			
								31c;		12k max	

11

#1

Date Nov 22/23 '93 Observers ..... Holy / Tor .....

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
c-12754-55	Focus								
56	Bias (4)								
57	Bias (4)								
58	Comp							Fstar clear	60s
59	HD87901	10 03 03	12 27 22	14 08 20					130s
60	HD87901	10 03 03	12 27 22	14 13 24					115s
~~61~~	~~Flat~~ 3 Comp							~~Fstar clear~~	60
62-64	Flat 3							Tungsten	
65	Bias (4)								
66	Comp							Rfr	60s
67	Flat							Tungsten	12s
68	BD+14 2307	09 56 12	14 53 27	20 00 57					410s
69	"			20 08 05					"
70	"			20 15 14					"
71	"			20 22 23					"

Spectr. Temp. ..... Dome Temp./Hum. ~~5?~~ 1.0°C/58.7% Transparency Conditions ... Partly Cloudy ... 12

Focus ..... 6.92 .....

Spectr. Temp. ..... Dome Temp./Hum. ..... Normalized: ~~5~~ HR2487 480 0 50 1024 4 1

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
No Meter				CCS CCD	1800 α=5530	250 μ	λc=5940			No Exposure Meter.	
		1.35	Bot I						Telluric	Airmass: 1.68	
										Lost some time finding	
										star - finder really messed	
										up!	
	24"								Hdy	Poor Seeing	

13

Date ..8/APR/1922/23.7h3.. Observers ..Hdy./Fox.....

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
Cu2772	BD +18 2307			20 29 33					4105
73	"			20 36 42					"
74	"			20 45 51					"
75	"			20 51 00					"
76	Bias (4)								
77	Comp							Fox	40
78	Flat							1000 Y2	12½
79	BD +18 2307			21 02 20					4105
80	"			21 09 29					
81	"			21 16 38					
82	"			21 23 47					
83	"			21 30 56					
84	"			21 38 05					
85	"			21 45 13					
86	"			21 52 22					

Spectr. Temp. ..... Dome Temp./Hum. -0.02/70.3% Transparency Conditions ..... Cloudy .....

Focus ..... 6.9.2 ..... (2016)

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	1800 w= 5530	250 μ	λc=5940				

15

*3

Date .of Aug.22/23-97.. Observers ..Hdy./.For.....

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc12787	Bias (4)								
88	Comp								
89	Flat								
90	BD+19 2307			220340					H10s
91	"			221049					"
92	"			221758					"
93	"			222507					"
94	"			223216					"
95	"			223925					"
96	"			224634					"
97	"			225343					"
98	Bias								
99	Comp							Fast Blue	60s
12800	Flat							TUNG Dish	12

Spectr. Temp. ..... Dome Temp./Hum. -1.2°C/73.1% Transparency Conditions ..... Cirrus 16

Focus ..... 6.92 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CCDS CCD	1800 w = 5530	250 μ					
									Hdy		

17

#4

Date .MARCH 22/23-'93.. Observers ..Hdy./Fkr.....

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc12801	BD+182307			23 09 27					
2	"			23:16:35					
3	"			23:23:44					
4	"			23:30:53					
5	"			23:38:02					
6	"			23:45:12					
7	"			23:52:20.					
8	"			23:59:29					
9	Bias								
10	Comp							Red	60s
11	Flat							Tungsten 1/2	12s
12	BD+182307			00 12 53					410s
13	"			00 20 02					
14	"			00 27 11					
15	"			00 34 20					

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions ... CLEAR - SL. HAZE IB

Focus ... 6.92 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	1800 G=5530	250 μ	λc=5880		Hdy		
										ave, ~161 :	
										ave ~ 155 / 160.	
										160 -ave.	
										160 ave.	
										160 ave.	
										160 ave.	
										162 ave.	
									Hdy	T = -2.6°C / H = 74.7%	

17

19

#5

Emulsion Batches:

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Date . MARCH 22/23-93. Observers . Hidy / Fox .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp
CC12816	BD+18 2307			004129					
17	"			004838					
18	"			005547					
19	"			010257					
20	Bias								
21	Comp								
22	FLAT								
23	BD+18 2307			011401					
24	"			012110					
25	"			012819					
26	"			013528					
27	"			014237					
28	"			014946					
29	"			015655					
30	"								

pectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions ..... Clear 20

ocus ..... 6.92 .....

pectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS ccd	1800 c = 5550	250 μ	λ_c - 5880		mdy		

#6 21

Emulsion Batches:

Date 1 Jan 22/23 Observers Hdy./Fbr.

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc12831	BIAS								
32	COMP							FWr	60
33	FLAT							TUNG N=½	12s
34	BD +18 2307			02 15 46					41s
35	"			02 22 55					
36	"			02 30 04					
37	"			[illegible]					
38	"			02 44 23					
39	"			02 51 32					
40	"			02 58 41					
41	"			03 05 50					
42	BIAS								
43	COMP								
44	FLAT								
	C →)								

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions ....THIN CLOUD.....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
										T=-3.6°C / H=80.2%	
										BAD GUIDING	
										CLOUD - THIN GETTING	
										THICKER	
										CANNOT SEE STAR.	

23

Date ..~~Mar.~~ 22/23/93. Observers ... Hdy./Fbc.....

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc12845	BIAS								
46	Comp								
47	HD 87901	10 03 03	12 27 22	3 35 13					140
48	"	"	"	03 38 07	03 41 27	5 20 W			20Ω
49	Comp								
50-52	FLAT x 3								
12853	BIAS 4								

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. -3.9 / 80.3%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
1										X=3.5 5400ADU	
1										X=3.6 6700ADU	
										11177 ADU	
										~~X=3~~	

pg 25 #1 Wed/Thurs

Date MAR 24 & 25, 1993 Observers Hay/Tn/Fbr

Emulsion Batches: .....

CSS 386 Time = DATE corrected (Right on now)

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc12854-5	Focus Test ABCD, EF	Comp/stellar							
Fm00482	HD65583	07 54 21	+29 31 04	19 50				"N" mode	
cc12856	BIAS(4)					Reversal 2 00E	+12°		
57	Comp cc12858 extra BIAS(4)?							FeAr Clear	60s
59	HD87901	10 03 03	+12 27	20 15 53					84
60	"	"	"	1900		01 56E			87
61	Comp							FeAr Clear	60
62									
64	FLATS x 3							TUNG A=1/2	12s
65	BIAS(4)								
66	Comp							FeAr Clear	60s
67	FLAT							TUNG A=1/2	12s
68	BD+18 2307	09 56 12	+17 53 27	20 36 39					40s
69				20 43 48					
70				20 50 57					
71				20 58 06					
72				21 05 55					

Spectr. Temp. ..... Dome Temp./Hum. +2.1°C 87% Transparency Conditions Sl hazy - foggy 26

Focus 6.84

Spectr. Temp. ..... Dome Temp./Hum. .....

90 CGAin CCD T ⇒ -100°C

Exp. Mtr.	Seeing	Pg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	1800 l/mm	250u	5880Å			Right on Dome SW (no wind)	
39×39 pixels	OK	7.00	G8V	CASS Gi		250u		Int	4×67 ms 2×133 ms	FANS ON. Since 18:48	
						250u		1c		Dome T = +1.7°C	
~~50K~~											
50K									Telluric Std	1.63 K max. AIR MASS 1.03214	
56K								4c	" "		
								3c			
								5c		11K max ADU	
										Dome T = +1.6°C	
										10879 ADU max	
266								6c	Hdy	Repeat ×4	
260											
260											
227	2.3"							6c			
300								7c			

27 pg #2

Date 1993 MAR 24/25 Observers Hdg on 19" / Fbr / Tn

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC12873	BD+18 2307	09 56 12	+17 53 27	21 13 04					40s
74	"			21 20 13					
75	"			~~21~~ 21 27 22					
76	FLAT							TUNG A=1/2	12s
77	Comp							FeAr Clear	60s
78	BIAS(4)								
79	BD+18 2307			21 41 06					40s
80	BIAS(4)			~~22 48~~ ~~21 48 15~~					*
81	Comp			~~21 55 24~~				FeAr Clear	60s
82	FLAT							TUNG A=1/2	12s
83	DARK	(Tel Zenith	East Side)	22 13 40					600s
84	BIAS(4)			22 24 23					
CC12885 86	DARK	(Tel Zenith	west Side)	23 20 31	followed by BIAS(4)		CC12886		1200s
87 88	DARK			23 41 22	followed by BIAS(4)		CC12888		1200
~~89~~ ~~90~~	DARK			00 02 47					1200
90	BIAS(4)								

Spectr. Temp. ..... Dome Temp./Hum. +1.4°C 87.6%H Transparency Conditions ..SI hazy 2B

Focus ... 6.84 .....

Spectr. Temp. ..... Dome Temp./Hum. +1.2°C 87.6%H → clouding in from East

Exp. Mtr.	Seeing	Pwr. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
285	3"	9.4 -9.9	KOV	CASS CCD	1800 l/mm G=5530	250u	5880Å	.	Hdy pgm		
280											
								7ci			
								8ci		MHX 11 K HD4	
								9ci			
								1ki		Dome T = +1.4°C	
188	2.3"							10co	Hdy pgm	clouding in	
								1ci		Too cloudy to keep stable	
										Too Cloudy " " "	
								~~15Co~~		" " "	
								7ci			
								1ci		CCD T = -100.5°C	
								1/ci			
								12ci		Dome T = +1.1°C CCD T = -102.0°C	
								13ci			
								1ci			

mg #3
29 Reopened completely → 19"/24" photometry

Date 1993 MAR 24/25 Observers Hdg./Tn./Fbr.

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc12891	BIAS(4)								
92	Comp							FeAr Clear	60s
93	FLAT							TUNG Ap-1/2	12s
94	BD+18 2307 ← WRONG STAR IN HEADER, CHECK	09 56 12	+17 53 27	02 46 03					416s
95	"			02 53 12					"
96	"			03 00 21					"
97	"			03 07 30					"
98	"			03 14 56					
99	"			03 22 05					
cc12900	"			03 29 13					
01	"			03 36 22		05 34W			
02	FLAT							TUNG Ap-1/2	12s
03	Comp							FeAr Clear	60s
04	BIAS(4)	(LATE)							

Spectr. Temp. ..... Dome Temp./Hum. +10°C 87%H Transparency Conditions Hazy

Focus 6.84

Spectr. Temp. ..... Dome Temp./Hum 10.5°C 88%H Complete startup after late clearing

CCDT Reset to normal −100°C setting

Exp. Mtr.	Seeing	Pwr. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	1800 G=5530	250u	5860Å				
180	3.5"	9.3 −9.9	KO V					5ci	Hdy pgm	Repeat x4	
Sum of 2											
310											
150											
145											
135											
130											
	5"							5ci			
								6ci		106 K max	

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P4

Emulsion Batches: .....

Date 23-March24/25 Observers Hdy. / F.Bc. / T.

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc12905	[illegible] Comp							FeAr Clear	60sec
06	HD177724	1900 48	+13 42 53	04 0013					15s
07	"			04 0312					"
08	Comp							FeAr Clear	60s
09 — 11	FLATS x3							TUNG Hyd 1/2	12s
cc12912	BIAS(4)								

Spectr. Temp. ..... Dome Temp./Hum. +00.7°C ..... 87% Transparency Conditions .. Hazy 32

Focus .... 6.84 .....

Spectr. Temp. ..... Dome Temp./Hum. +00.7°C 86%

Exp. Mtr.	Seeing	Fig. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
						250u	5880A				
32 K		2.99	AOV? mm					3c1	Telluric Std	6900 ADU max/pixel	
38 K									"	10 K ADU max	
										AIR MASS 1.55	
										10,754 ADU MAX	
					All to Perth work						

Exp.

33
pg #1 Thurs-Fri

Emulsion Batches: .....

Date 1993 MAR 25/26.... Observers Hdg/T.a/Fbt..... CSS 386 Clock Found to be Behind 20 min. at 19:50

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc12913 cc12914	Comp Hartman /	Stellar Hartmann				00 46E	+27°	FeAr Clear	40/40
12915	BIAS (4)								
FMC0483	ABCD; E,F HDC5583	07 54 21	+29 31 04	19 33				"N" wedge	
cc12916	Comp							FeAr Clear	60s
* 17	HD87901	10 03 03	+12 27 00	19(?)	* edit Start Time To ≈ 1952 (CMD Clock)				33s
18	"	"	"	19 54	Clock Corrected				39
19	Comp							FeAr Clear	60s
20 → 22	FLATS x 3							TUNG A-1/2	10s
23	BIAS (4)								
24	Comp							FeAr Clear	60sec
25	Flat							TUNG A-1/2	10s
26	BD+18 2307	09 56 12	+17 53 27	20 07 55					40s
27				15 04					"
28				22 13					"
29				2922		01 30E			"
30				20 36 30					"

Spectr. Temp. ..... Dome Temp./Hum. +2.7°C 82% Transparency Conditions Sl. Hazy

Focus 6.82

Spectr. Temp. ..... Dome Temp./Hum. +2.1°C 82% 90 CGain CCDT => -100C

Exp. Mtr.	Seeing	Tel. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
	Set 6.82, T=2.7C			CASS CCD	1800 l/mm G=6030	25u	6563Å	3c/4ci	Focus Test	6.84 set gave 4 pixel Real; 6.82 set = <.2 pixel Real	OK
								1ci			
39x39	Fine	7.0	G8V	DOME SW		25u Aboveslit			4 x 67ms Int; 2 x 133ms Int	NO FANS, Dome open, no wind at 1840	
						25u		5ci			
35K	HEADER TIMES ARE 20 MINS. BEHIND							6ci	Telluric Std.	MAX 13K	
32K	HEADER TIMES ARE OK							7ci			
								8ci			
										12.1 K Max	
330		9.4 -9.9	K0V					10ci	Hdy prog	8x Repeat Hz emission on Blue side of ABs	
330											
330											
330											
330								10ci			

pg#2

35

Date 1993 MAR 25/26... Observers Hdg 19"/24" phot / Th. / Fbr

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp
cc12931	BD+18 2307	095612	+17 5327	20 4339					40s
32				5048					〃
33				5757					〃
34	BIAS								
35	COMP							FAR CEN	60s
36	FLAT							[illegible]	40s
37	BD+18 2307	095612	175327	211031				[illegible]	40s
38	〃			211740		00 42E			
39	〃			21 24 49					
40	〃			3158					
41	〃			3906					
42	〃			4615					
43	〃			5324					
44	〃			220033					
45	BIAS (4)								

Spectr. Temp. ..... Dome Temp./Hum. +2.1°C 82.9% Transparency Conditions ..Sl hazy > Sl foggy....36

Focus ...6.82.....

Spectr. Temp. ..... Dome Temp./Hum. ..... CCD FMT ~~400~~ 00 50 1024 4 1 All night

Exp. Mtr.	Seeing	Fig. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
335	2"	9.4 -9.9	KO V	CASS ccd	1800kl/mm G=6035	250μ	6583A		Hdy pgm		
305											
300								10c;			
.											
305	2-3"							10c;	Hdy		
268										AIRMASS 1.134	
280											
290											
216											
227											
229										T= 0.08°C / Hum: 86.8%	
233								10c;			

37
#3

Date ..March 25/26 93 Observers ....Hdy/Tn/Fbr.....

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc12946	Comp							FeAr Clear	60s
47	Flat							TUNG A=1/2	10s
48	BD+18 2307			221202					4m
49	"			1910					
50	"			2619					
51	"			3328					
52	"			4037					
53	"			4746					
54	"			5455					
55	"			230204					
56	Bias (4)								
57	Comp							FeAr Clear	60s
58	Flat							TUNG A=1/2	10s
59	BD+18 2307			231428					
60	"			2137					
61	"			2846					

Spectr. Temp. ..... Dome Temp./Hum. +01.0°C ..... 86.8% Transparency Conditions ... HAZE / FOG 38

Focus 6.82

Spectr. Temp. ..... Dome Temp./Hum. +00.3°C 87.3%

Exp. Mtr.	Seeing	Pg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	1800 L-6080	250 μ	λ_c=6593Å				
200	2"-4"	9.4 -9.9	KOV					1 1/2 i	Holy Pgm		
200											
200											
190											
185											
200											
200											
190								1 1/2 i			
~~210~~											
240								1 0 1			
243											
230											

39
#4

Date March 25/26 '93 Observers Hdg./J.Ta./F.Ebr.....

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc12962	BD+18 2307	09 56 12	+17 53 27	23 35 55				1	40s
63	"			23 43 39					
64	"			23 50 47					
65	"			23 57 56					
66	"			00 05 05					
67	Bias (4)								
68	Comp							Fe Ar Clear	60s
69	FLAT							Tung Ap=1/2	~~30s~~ 8s
70	BD+18 2307			00 33 07					40s
71	"			00 41 11					
72	Bias								
73	Comp							Fe Ar Clear	60s
74	FLAT			00 59 05				Tung Ap=1/2	8s
75	Comp							Fe Ar Clear	60s
76	HD87901	10 03 03	+12 27	01 04 45					73s

Spectr. Temp. ..... Dome Temp./Hum. 100.2°C 89.3%H Transparency Conditions ..Incr. Haze & s/foggy....

Focus ...6.82.....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
240	3"					250μ	6563Å	10c;	Hdg pgm		
240								12c;			
241										T=0.01/HUM=90.1%	
240											
235											
230	4"							13c;			
180								13c;		1	
								1c;		Dome T= -1.3°C	
								3c;			
								.			
35K								5c;	Telluric Std	AIRMASS 1.522 Fog increasing	

41 pg #5

Date 1.9.9.3. MAR. 25./26 Observers . Hdg. / F.Bs. / Tq. .....

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc12977	HD87901	10 03 03	+12 27	01 06 18					88
78	Comp							FeAr clear	60s
→ 79 81	FLATS x 3					62 59W		Tung Ap=12	8sa
82	BIAS(4)								
83	DARK 20min								1200s
84	BIAS(4)								

Spectr. Temp. ..... Dome Temp./Hum. -1.6C 91% Transparency Conditions ... Foggy 42

Focus .. 6.82 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
35K						25u	6563Å		Telluric Std	7.5KADU MAX	
								5ci			

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P9#1 Fri Set

Emulsion Batches: .....

Date 1993 MAR 26/27 Observers Hdy. / Tn .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC12985 986	Comp/Stellar	HARTMAN Rons				00 20W	+32°	FeAr clear	60/90s
987	BIAS(4)			19 4015					
988	Comp							FeAr clear	60s
989	HD87901	10 03 03	+12 27	19 4612					57s
990	"	"		19 4803					
91	Comp							FeAr clear	60s
92 94	FLATS x 3	10 0303						TUNG H=1/2	1As ea
95	BIAS(4)	10 0303							
96	FLAT	09 5612	+17 5327					TUNG A=1/2	1s
97	Comp	"		20 0050					60s
98	BIAS(4)	"							
99	BD+18 2307	09 5610	+17 5327	20 1221					4[illegible]
CC13000	"			20 2026					411
01	"			20 2746					410s
02	"			20 3455					"
03	"			20 4204					"

Spectr. Temp. ..... Dome Temp./Hum. +1.0°C 86% Transparency Conditions hazy...sl foggy..... 44

Focus ..... 6.82 480 0 50 1024 4 1 CCDFMT

Spectr. Temp. ..... Dome Temp./Hum. +3.0°C 82.3% 90CGAIN CCDT → −100°C

Exp. Mtr.	Seeing	Rtg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	1800 l/mm G=5530	250μ	5880Å	3c; 4c;	Focus Test	24 27 pcols 938 447 xplot Stell-S/Rel	
								5c;			
50K								6c;	Telluric Std	1.39 Airmass 15k max	
50K								7c;	"	15k max	
								8c;			
								9c;		MAX 12K ADU/pixel	
								1c;		Dome T = +3.4°C	
								10c;			
								11c;			
								1c!			
330	2"							12c;	Hdy pgm	cols 4 × 140 ADU above bkgnd. (9740 photon	
330		9.4 −9.9	KOV					13c;	Hdy pgm	(≥ 45/1 S/N)	
330								14c;		Repeat × 6	
330	2-3'							"		Air mass = 1.184	
330								"			

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pg#2

Date . 1993 MAR 26/27 Observers . Hdg. IT.....

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC13004	BD+18 2307	09 56 12	+17 53 27	20 49 13		01 05E			
05				20 56 22					
06				21 03 31					
07	Comp							FeAr Clear	60s
08	FLAT							TUNG Ap=1/2	14s
09	BIAS(4)								
10	BD+18 2307			21 15 28					410s
11				21 22 37					〃
12				21 29 46					〃
13				21 36 55					〃
14				21 44 04					〃
15				21 51 13					〃
16				21 58 50					〃
17				22 05 31					〃
18	FLAT							TUNG Ap=1/2	14s
19	Comp							FeAr Clear	60s

Spectr. Temp. ..... Dome Temp./Hum. +3.0°C 82.3% Transparency Conditions .. Sl. Hazy 46

Focus ... 6.82 .....

Spectr. Temp. ..... Dome Temp./Hum. +2.0°C 82.8%

Exp. Mtr.	Seeing	Pic. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
365	2"3"	9.4 -9.9	KO V		G=5530	250μ	5880Å		Hdy pgm		
345											
333								14c;			
								15c;			
								16c;		13K max	
								1c;		DomeT = +2.7°C	
345								17c;		Repeat x8	
340											
280	3"										
300											
300											
270	3"4"										
250	3"									NaD line Rel narrow, Prob eclipse	
238								17c;			
								18c;		14K MAX	
								19c;			

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Pg #3

Emulsion Batches: .....

Date 1993 MAR 26/27 18 Observers Hdy. /T.n .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC13020	BIAS (4)								
21	BD+18 2307	09 56 12	+17 53 27	22 17 52					41s
22				25 01					
23				32 11		00 38W			
24				39 20					
25				46 29					
26				53 38					
27				23 00 47					
28				07 56					
29	COMP			23 15 30				FeAr Clear	60s
30	FLAT							Tung A=1/2	12s
31	BIAS(4)								
13032	BD +18°2307			23 20 02					410s
33				23 27 10					
34				34 20					
35				41 28					

Spectr. Temp. ..... Dome Temp./Hum. +21°C ....88% Transparency Conditions .. Sl. hazy 48

Focus ... 6.82 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Pg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	1800 G5530	250u	5880Å	1ci			
Sum of 2	3"	9.4 -9.9	470 V					20ci	Hdy pgm		
460											
224											
260											
230											
254											
260											
								20ci			
								21ci			
								22ci			
278								23ci			
~~N.R.~~											
282											
299											

pg #4

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Date 1993 MAR 26/27 Observers Hdy/Tn

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
13036	BD +18° 2307			23 48 37					410s
37				23 55 47					
38				00 02 55					
39				00 10 04					
40	FLAT							Tung A=1/2	12s
41	COMP							FeAr Clear	60s
42	BIAS(4)								
43	BD+18° 2307	095612	+175327	00 21 42					410s
44				00 28 50		2 35W			"
45				00 36 00					"
46				00 43 09					"
47				00 50 18					"
48				00 57 27					"
49				01 04 36					"
50				01 11 45					"
51	Comp							FeAr Clear	60s

Spectr. Temp. ..... Dome Temp./Hum. +0.9°C/85.2% Transparency Conditions .Sl. hazy..... 50

Focus ... 6:82 .....

Spectr. Temp. ..... Dome Temp./Hum. +00.3°C 87.2%

Exp. Mtr.	Seeing	Proj. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
295		9.4 -9.9	HOV			25u	5886		Hdg pgm		
293											
274											
280								23c;			
								24c;			
								25c;			
290								26c;	Hdg pgm	8×Repeat	
295										1.33 AIR mass	
285	3"										
265											
245	4"										
260											
245											
228								26c;			
								27c.			

pg#5

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Date 1993 MAR 26/27 Observers Hdy. I.Ta

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Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp
CC13052	FLAT							TUNG Ap=1/2	12s
53	BIAS(4)								
54	BD+18° 2307	09 56 62	+17 53 27	01 23 26					40s
55	"			30 35					"
56	"			37 44					"
57	"			44 53					"
58	"			52 02					"
59	"			01 59 11					"
60	"			02 06 20					"
61	"			02 13 29					"
62	FLAT							TUNG Ap=1/2	12s
63	Comp							Feltr Clear	60s
64	BIAS(4)								
65	BD+18 2307			02 24 41					40s
66				31 50					40s
67				38 59		4 46W			40

Spectr. Temp. ..... Dome Temp./Hum. +00.2°C ... 87.1% Transparency Conditions .. Sl. Hazy .....

Focus .. 6.82 .....

Spectr. Temp. ..... Dome Temp./Hum. −00.5°C ... 87.1% 90CGAin

Exp. Mtr.	Seeing	Pg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
					1800l/mm G=5530	250µ	5880Å	28c;		13516 ADU	
195		9.4 9.9	KO V					29c;	Hdy pgm		
183											
165	3"-5"										
164											
162											
157											
170											
								29c1			
								30c;		136 K ADU max	
								31c;			
								1c;			
155								32c;	Hdy pgm		
130	4"-6"										
147								32c;		2.27 AIR MASS	

pg#6

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Date 1993 MAR 26/27 Observers Hdg/J.Tn

Emulsion Batches:

53

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC13068	BD+18° 2307			02 46 21					40
69	"			53 30					"
70	"			03 00 39					"
71	"			03 07 52					"
72	"			03 15 08					"
73	Comp							FeAr Clear	60s
74	FLAT							TUNG Ap=1/2	12s
75	BIAS (4)								
76	Comp for Regulus							FeAr Clear	60s
77	HD87901	10 03 03	+12 27	03 36 08					200s
78	"	"	"						247
79	Comp							FeAr Clear	60s
80	FLAT							TUNG Ap=1/2	12s
81	~~FLAT~~							"	
82	FLAT							"	

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions Sl hazy .....

Focus ... 6.82 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
130						250u	5890Å				
131											
120								32c			
120								32c1		X=3,1	
100	5"							32c;			
								33			
								33c:		12140	
								5c;			
29700								6c;	Telluric Std	X=4.033	11370
24900										X=4.44	9194
								9c;		11075 ADC MAX	

55 Pg #7

Date 1993 MAR 26/27 Observers HDG / JL

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC13083	~~BIAS(4)~~ Comp			035715				Feat Clear	60s
84	HD144579	160130	+392536	035954					222
85	Comp							Feat Clear	60s
FN00484	ABCD; EF HD144579	160130	+392536	~0410		~0010 W	+39°	"N" Mode	
86	FLAT								
CC13087	BIAS(4)								
88	DARK			041257					600s
89	BIAS(4)								

Spectr. Temp. ..... Dome Temp./Hum. -008C 87%H Transparency Conditions ..fuzzy..... 56

Focus ...6.82..... FANS ON All night.

Spectr. Temp. ..... Dome Temp./Hum. -008C 88%

Exp. Mtr.	Seeing	Pkg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
					G5530	25μ	5486	/Ic;			
1968	3-4"	666	G8V					Ic;	Std vel	Tel W set Side now	
								/			
31×31	2-3			4×67ms +2×133ms		25μ			Seeing Test	Dome W S W	
										15 4 9 MAX ADU	

pg 1

57 Date 1993 MAR 27/28 Observers Hdy/Tn

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc13090 91	Comp/Stellar HARTMAN Test				1924				40/48
92	BIAS(4)				1936	0227E			
93	Comp							FeAr Clear	60
94	HD87901	10 03 03	12 27 22	19 39 45					49s
95	"	"							68s
96	COMP							FeAr Clear	60s
97 98 99	FLAT x3							Tung A=1/2	10s
13100	BIAS(4)								
1	FLAT							Tung A=1/2	10s
2	COMP							FeAr Clear	60s
3	BD+18° 2307	09 56 12	17 53 27	19 53 ~~48~~ 18					410s
4	"			20 90 27					
5	"			20 07 36					
6	"			20 14 44					
7	"			20 21 53					
8	"			20 29 02					

Spectr. Temp. ..... Dome Temp./Hum. +6.5°C 65% H Transparency Conditions ..Clearing nicely..... 58
CIRRUS

Focus ... 6.78 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

90C GAIN CCDT -> -100C

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
						250μ				24 26 7867 55 xpld UVS/Red	
										Tel Normalization & Gem	
27000										9391	
41000										14221 1.27 AIR UX ASS	
								8c1		13219 13108 13048 ↓ ?	
										13800	
148								11c1			
119											
114											
93											
96											
97											

pg. 2 59

Date 1993 MAR 27/28 Observers Hdy/Tn

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC13109	BD+18° 2307	09 56 12	+17 53 27	20 36 11					
110	"			20 43 19					
1	COMP							FeHr Clear	60s
2	FLAT							TUNG 4=1/2	10s
3	BIAS(4)								
4	BD+18°2307			20 55 38					410s
5	"			21 04 40					410s
6	"			21 11 55					410s
7	"			21 19 11					410s
8	"			21 41 29					410s
19	~~FLAT~~ "			21 49 01					410s
20	Comp							FeHr Clear	60s
21	~~FLAT(4)~~							TUNG 4=1/2	10s
22	BIAS(4)								
23	BD+18°2307			22 00 27					410s
24	"			22 07 38					410s

Spectr. Temp. ..... Dome Temp./Hum. +5.7°C / 63.8% Transparency Conditions ... Part. Cloudy 60

Focus ... 6.78 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Pg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
68		9.4 -9.9	10 V		G=6035		6563 Å			star disappearing	
98								11C1			
										13987	
89								14C1			
156											
202											
252										TIME LOST	
230	3"									TO @#%&! TOUR	
240								15C1			
										15073 ADU	
237											
140								18C1			

pg #3 61

Emulsion Batches:

Date 1993 MAR 27/28 Observers Hdy. I.T.s

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CCD3125	BD+18 2307	09 56 12	+17 53 27	22 15 12					40s
26	BIAS(4)			22 48					
27	FLAT							TUNG Ha=1/2	9s
28	Comp							Fe Ar Clear	60s
29	BD+18 2307			22 55 35					40s
30	BD+18° 2307			23 02 52					40s
31	"			23 10 01					40s
32	"			23 17 26					40s
33	"			23 24 40					"
34	"			23 32 08					"
35	"			3917					"
36	"			4626					"
37	Comp							Fe Ar Clear	60s
38	FLAT							TUNG Ha=1/2	9s
39	BIAS(4)								

Spectr. Temp. ..... Dome Temp./Hum. +5.4°C 67% Transparency Conditions INCR Cloud 62

Focus 6.78 .....

Spectr. Temp. ..... Dome Temp./Hum. ~~14.1°C~~ ~~69%~~

Exp. Mtr.	Seeing	Fg Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
80	2"	9.4 -9.9	KOV	CASS CCD	1460G/mm G=6035	250u	6563Å	18c	Holy Spm	cloud 20/1 S/N	
								19c		MAX K HOL	
120											
126											
150											
156											
150											
150	2"3"									.	
140										PART cloudy	
130								22c			
								23c			
								23c		15.3K MAX	
								Ac			

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Emulsion Batches:

Date 1993 MAR 27/28 Observers Hdy. I. Tn

Ex. to 12853

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC13140	BD+18 2307	09 56 12	+17 53 27	23 58 49		02 09W			4m
141	DARK			00 09 24					90s
142	BIAS(4)								
143	DARK			00 33 52					90s
144	BIAS(4)								
145	FLAT			01 06 51				TUNG Ap=1/2	8s
146	Comp			01 07 43				FEA CLEAR	60s
147	BIAS(4)			01 09 59					
148	BD +18° 2307			01 12 08					41Ds
149	"			01 19 17					"
150	"			01 26 26					"
151	"			01 33 35					"
152	"			01 40 52					"
153	"			01 48 01					"
154	"			01 55 11					"
155	"			02 02 19					"

Spectr. Temp. ..... Dome Temp./Hum. +4.2°C 69.3% Transparency Conditions ..... PART cloudy 64
CIRRUS

Focus ..... 6.78 .....

Spectr. Temp. ..... Dome Temp./Hum. +3.5°C 65.6%

Exp. Mtr.	Seeing	Pg/ Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
140		9.4 -9.9	KOV			250u	6563H		Hdg pgm		
								2c;		CCDT = -10.9°C	
								1c;		DomeT = +3.9°C	
								25c;		1305K MAX	
								26c;			
								1c;		DomeT = +3.7°C	
176	3"							27c;		CLEARing	
180	3.4"										
170	4"										
160	4.6"										
150											
143											
143											
150								27c;			

pg#5 65

Date 1993 MAR 27/28 Observers Hdy./J.G.

36

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC13156	Comp							FeAr Clear	60s
57	FLAT							TUNG Apt 1/2	8s
58	BIAS(4)								
59	BD+18 2307			02 14 25					40s
60				02 21 34					"
61				02 28 43					"
62				02 35 52					"
63				02 43 12					"
64				50 21					"
65				57 30					"
66				03 04 39					"
67	BIAS(4)								
68	FLAT							TUNG A 1/2	8s
69	Comp							FeAr Clear	60s
70	Comp for HD87901							"	"

Spectr. Temp. ..... Dome Temp./Hum. 35° 65% Transparency Conditions Some cloud 66

Focus 6.78

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
						25a	6563B	28c			
								29c		12799	
146	BAD							30c	Holy pgm		
145											
136											
130											
136											
106											
74											
92								30c			
										12K max	
								32c			

67 pg. 6

Date 1993 MAR 27/28 Observers Hdy/Tn

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc13171	HD87901	100303	+12 27	03 [redacted] 1906					12s
2	"			03 21 34					15s
3	BIAS(4)								
4	COMP								
5	FLAT							TUNG Ap-1/2	85s
13176 13178	~~COMP~~ FLATS x3			TELESCOPE BROUGHT TO V502 Oph THEN BACK TO 5"20" W FOR COMPLETION OF FLATS WE FORGOT FOR REGULUS					10s
13179	BIAS(4)								
80	COMP FOR V502	WRITTEN ~~DONE~~ OUT OF ORDER FROM REST							
81	V502 Oph	16 39 48 1950	+00° 36' 1 1950	03 43 21					315s

REGULUS POSITION

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions OK 68

Focus 6.78

Spectr. Temp. ..... Dome Temp./Hum. +3.2°C / 65.3% +3.4 64.8 Clouding in finally

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
31000							6563Å			7705 ADU	
35000										9783 X=3,8	
										11.2K ADU	
										13995 13784	
								Sc:			
215		~~PR~~						6C:	TOKEN	Clouding	
									T_{CCD} = -100.4 °C		

#1 69 Mon-Tues

Date 1993 MAR 29/30 Observers [Bln] ..... In./Fbr.

Emulsion Batches: .....

..... Disq view problem?

Not using DV on CSS386 Tonight+. (Sing. le. window)

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc13182, 183	Focus Comp/Stellar HARTMANN			22 30		01 39W	+47 11	FeAr Clear	
184	BIAS(4)								
185	Comp							FeAr Clear	60s
186	HD 77327	085648	+473303	223116		01 52W			609
187	Comp							FeAr Clear	60s
188	~~HD 79158~~ Comp			2					
189	HD 79158	090716	+433748	224859		02 24W			2069
190	Comp							FeAr Clear	60s
191 - 193	FLATS x3							TUNG Ap=1/2	8s
194	~~HD~~ BIAS(4)			~~2~~ 232938					
195	HD 79158	090716	+433748	232938		0254W			1491
196	Comp								
197	HD 79158	090716	433748	235832					828
198	Comp								
199	BIAS								
200 - 202	FLAT x3							TUNG Ap=1/2	8s

Spectr. Temp. ..... Dome Temp./Hum. +80°C ... 55% Transparency Conditions .. P.M.T. Cloudy 70

Focus ... 6.78 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

480 0 50 1024 4 1 CCDFmt

90CGain CCOT → −100°C

Exp. Mtr.	Seeing	Pg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	1800k/mm G-6055	250μ Full	6600Å		Focus.	Stellar 2-3 pixels Red	
								1ci		CCOT = −101.7°C	
								3ci			
2960	4"	360	A1V$_n$					4ci	Telluric Std	Cloudy. Hot OK as Telluric Std.	S/N (140/1)
										← 20K photons ΣAVG of 10 cols above bkgnd	
13000	3'-6"	5.32	B8III					5ci	Bln pgm	Clearing toward expend Airmass 1.065 at start	280/1 S/N
								6ci		+ 7.3°C Dome Temp	
								7ci		12.5 K MAX	
								1ci			
14500								8ci	Bln pgm		
15K								9ci			
								11ci			

71
#2 M-T

Date 93-Mar 29/30 Observers [Blw] Tu/Fbs

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc13203	HD 79158	090716	433748	001845					897
204	Comp							FeAr Clear	60s
205	HD79158			003643		03 52.5W			883
206	Comp			5231				FeAr Clear	60s
207	HD79158			005442		04 16W			1279
208	Comp							FeAr Clear	60s
209	HD79158			012023					3226
210	Comp							FeAr Clear	60s
211	BJ45(4)								
212	HD79158			021731		05 43W			1513
213	Comp							FeAr Clear	60s
214-216	Fast x 3					05 45W	drive off	Tuning Ap=1/2	8s
217	Comp (Tel East side now)					05 43W		FeAr Clear	60s
218	HD79158			025444		06 11 W			956
219	Comp							FeAr Clear	60s

Spectr. Temp. ..... Dome Temp./Hum. +6.8 / 56.396 (0020) Transparency Conditions .... HAZE / CIRRUS 72

Focus .... 6.78 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Pg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
16.3K	≈4"	5.32	B8III	CASS CCD	1800 α=6055	200 M	6600Å	12ci		96K photons over locals above background.	3QY/1
								10ci			
15K								12ci	B/n pgm	1.287 Airmass	
								13ci			
12,900								14ci	B/n pgm	1.420 Airmass end thin cloud, thick at end	
								15ci			
12,760	3-5"							16ci	B/n pgm	1.577 AIRMASS	
								17ci			
								~~Bci~~		AIRMASS ≈ 1.8 1.94 end Dome T = +6.6°C	
13,275	6"										
~~13,275~~	~~6"~~							18ci		CCDT = -100.3°	
								11		11K max adu	
								18ci			
14K	4"							12ci			

#373

Date 93-Mar 29/30 Observers [illegible]

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc3220	HD79158	090716	433748	031511		06 49W			1054
21	Comp							Fear Clear	60s
22	BIAS(4)								
23	HD79158			033553		0659W			1358
24	Comp							Fear Clear	60s
25	Comp							"	60s
26	HD77327	085648	+473303	040427					811
27	Comp							Fear Clear	60s
→ 28 30	FLATS x 3						+47°	Tung Ap=½	8s
31	Comp							Fear Clear	60s
32	HD177724	190049	+134253	042305		0726E			82s
33	Comp							Fear Clear	60s
34	BIAS (4)			~~042743~~					
35	Comp			~~042743~~					
36	NOVACyg 92	202743	+521739	044108					179

Spectr. Temp. ..... Dome Temp./Hum. 46.1°c ..... 58.6% Transparency Conditions Bl.w. clear .....

Focus .. 6.78 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Pic. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
14100	4"8"	5.28	B8III	CASS CCD	1800 l/mm G-6055	250μ FULL	6600Å	12ci	Blk pgm	2.56 AIR MASS at end	
								19ci			
								1ci			
14,600								20ci			
								21ci		2.70 AIR MASS at end	
								22ci			
14K								4ci	Telluric Stel.	AIR MASS 2.80	
								~~23~~ 3ci			
								24ci		11.9K max	
								23ci			
14K		2.99	A0V n					24ci	Telluric Stel	AIR MASS 1.37 Tel west side again	
								23ci			
~~24~~								1ci			
~~24~~											
24								4ci		weak test exp. confirmed	

#4 75

Date 1993 MAR 29/30 Observers [Bln.] ... Th. / Fbt .....

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC13237	Nova Cyg 92	202743	+521739	04 4439		0308 E			1412
38	Comp							Fe Ar Clear	60
~~41~~ 39	BIAS(4)								
40	Focus Test	Comp/Stellar	Hartman			03 E	+52°	Fe Ar Clear	60/60

Spectr. Temp. ..... Dome Temp./Hum. +5.8°C 59% Transparency Conditions ... Fine ... 76

Focus ... 6.78 ..... some thin cloud

Spectr. Temp. ..... Dome Temp./Hum. +5.7°C 59%

Exp. Mtr.	Seeing	Pg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
230	2"-4"	12?			G-6055	250μ Full	6600A	5C;		Clear here	
								25C;			

77

#1

Date 83 March 30/31 ..... Observers ... Fair / Hilliard .....

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc13242-3	Focus Test								
244	Bias (4)								
245	Comp							Fabr Clear	60s
246	HD77327	085648	473303	192050					80s
247	Comp								
248	HD77327	085648	473303	192639					133
249	Comp								
250 -252	Flat x 3							Tung Δ=½	8s
253	Comp							Fabr Clear	60s
254	HD93521	104242	3806	195010					1488
255	Comp								
256	Bias (4)								
257	Comp								
258	HD77327	085648	473303	204409. ~~204639~~					103
259	Comp								

Spectr. Temp. ..... Dome Temp./Hum. 11.7°C/52.2% Transparency Conditions ..... CLEAR 78

Focus ..... 6.78 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

480 a 50 1024 4 1

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	1800 G=6055	250 μ FULL	λ_c=6600				
14K		V 3.60	AIIIa						TELLURIC		
22K		V 3.6	AIIIa							NICE SPECTRUM	
17K											
22K		V 3.60	AIIIa						TELLURIC	AIRMASS=1.0017	

79
#2

Date ..93. March 30/31. Observers ..Fbr./HLw.....

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
260	Comp							FBr	60s
261	HD93521	104242	38 06	21 07 16					1877
262	Comp							FBr CC	60s
263	Bias								
264-266	Flat x 3							Tung A=1/2	7s
267	Comp							FBr CC	60s
268	HD77327	085648	47 33 03	21 54 45 ~~[illegible]~~					101
269	Comp							Tung A=1/2	7
270-272	Flat x 3								
273	Bias (4)								
274	Comp (at Hα!)								
275	NGC 3031 Supernova	1950: 09:51:19	1950: 69:15:25	~~22:18:03~~		~~0:42.54~~	~~+69 03 06~~		215
276	Comp 2 6360	A "	"	22:27:08		0:57:03			516
277	Comp							FCNE clear	
278	HD124897	1900: 14 11 06	1900: 19 42 00	22:57:44					6 Sec

Spectr. Temp. ..... Dome Temp./Hum. 9.8°c / 55.3% Transparency Conditions ..... CLEAR .....

Focus ..... 6.78 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	1800 G=6055	250μ Full	λ_c=6600				
18K											
21K									Telluric	Airmass = 1.0223	
~~45~~										Spectrum is totally flat at Hα	
163											
				CASS CCD	G=4990 1800 ℓ/mm	310μ tripe slit	cλ=5140Å				
3600c		O	K						Std. Vel.		

81

#3

Date 93 March 30/31. Observers Fox/HHW

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
279	Comp							FeNe Clear	20 sec
280	Bias (4)								
281	Comp							"	"
282	HD 123782	14 04 36	49 56 00	23:07:18					43 s
283	Comp							"	20 s
284	Comp							"	"
285	AC+62 26749	17 34 30	61 45 00	23:19:48					3600 s
286	Comp								
287	Bias (4)								

Spectr. Temp. ..... Dome Temp./Hum. 8.9°c / 56.3% Transparency Conditions ..... Cirrus / Haze 82.

Focus ..... 6.78 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				eASS CCD	1800 $a = 4990$	310 μ	$\lambda_c = 5140\text{Å}$				
2113		5.3	M2IIIab						Std Vel.		
										Seeing Rather Poor	
2260		9.95	MIII						HIW Pgm.	Air Mass = 1.6	

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pg#1 sun mon

Emulsion Batches:

Date 1993 Apr 4/5 Observers [Bln] Tn

Telencoders norm on H.R 3275

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc13288 289	Comp/stellar Hud TmAn posn				2016	00 30W	+43°	FeAr Clear	40/40
290	BIAS(4)								
291	Comp							FeAr Clear	60s
292	HD86360	09 52.54	+12 55	20 24 19					1260s
293	Comp							FeAr Clear	60s
294	HD86360			20 49 06		00 09E			1434
295	Comp							FeAr Clear	60s
296 – 298	FLATS x 3					0000	+12 28	TUNG Clear	45s
299	BIAS(4)								
300	Comp							FeAr Clear	60s
edit header 301	HD112028	12 48 23	+83 57	21 36 15		02 13E			1447
302	Comp							FeAr Clear	60s
303	HD112028			22 05 08					
304	Comp							FeAr Clear	60s
305 – 307	FLATS x 3							TUNG Clear	
308	BIAS(4)								

Spectr. Temp. ..... Dome Temp./Hum +2.8°C ... 72% Transparency Conditions Clearing fast 84

Focus ... 6.90 .....

Spectr. Temp. ..... Dome Temp./Hum +1.6°C ... 70.3% CLAMBIA

480 0 50 1024 4 1 CCDFMT

CGAIN 90 CCDT → -100°C

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	1800 l/mm G=4565	250u FULL	* 4475Å	3ci 4ci	Focus Test	*Actual pixel #512 centrd λ = 4490Å 294-307 x plot → Stellar 3 pixel Red	
								1ci			
								5ci		λ Range 4400 – 4630Å	
~~30K~~ 30 300	4"	B 5.22	B9 IV					6ci	Bln SB pgm	FOR 10 COLS >~~15~~ K ADU Σ AVG above background	
								7ci			
38000	3.4"	B 5.22	B9 IV					8ci	Bln SB pgm	4482Å @ pixel # 605	
								9ci			
								10ci 11ci 12ci		MAX = 13.7 K ADU/pixel	
								1ci		Dome T = +2.0°C	
			A					13ci		Δ RA +00 01 48 Δ Dec 00 02 00	
35700	3"	V 5.32	AJ					14ci	Bln pgm	South and brighter of pair EAST one 400	<20 K ADU Σ AVG
								15ci			
36668								16ci	Bln pgm		
								17ci			
								18ci		17 K ADU MAX	
								~~1ci~~			

85
#42 Sun Mon

Date ...1993 Apr 4/5..... Observers [BJ] MKi /TM.....

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp
cc13309	Comp							FeAr Clear	60s
310	HD103095	11 47 13	+38 26 10	22 47 34		00 19 E			602s
311	Comp							FeAr Clear	60s
312	HD103095			23 01 51		~~00 05W~~			1009
313	Comp							FeAr Clear	60s
Fm00485	ABCD, EF HD103095					~00 05W		'N' made	
314	BIAS(4)								
315	Comp							FeAr Clear	60s
316	HD164852	17 58 06	+20 50	23 40 35		05 11 E			2039
317	Comp							FeAr Clear	60s
316	HD164852			00 17 55		04 43 E			1471
319	Comp							FeAr Clear	60s
→ 320 322	FLATS x 3					04 38 E	+20 51	Tung Clear	45s
323	BIAS(4)								
324 325	Focus / comp / stellar Hartmann			00 56		0 0	+30°	FeAr Clear	60/8

Spectr. Temp. ..... Dome Temp./Hum. +1.6°C 70%H Transparency Conditions ..Sl. hazy..... 86

Focus ..6.90.....

Spectr. Temp. ..... Dome Temp./Hum. 10.8°C 70% CLIMEDH

MAYBe some AURORA in Moonlit Haze

FANS on Since Start of night

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CHSS CCD	1800l/mm G4565	250u Full Length	* 4475Å	19ci		* Actual 4490Å central	
6378	3"	6.45 V	G8Vp					20c	Std Vel	High prop motion Encoders fine for 1993 epoch posn.	S/N 40/1
	3"	6.45 V	G8Vp					21ci		≤ 2K ADU SAUG of 5 cols above bkgnd.	
12K	2"-3"	6.45	G8Vp					22	Std Vel Repeat		
								23ci			
39x39 pixels				4x67ms 2x133ms	above *	250u Full Length			Seeing Test	Dome WSW no wind	
								1c		Dome T = +1.4°C	
								24ci			
24,400	4"-6"	B 5.19	B3V					25ci	B1n SB pgm	10K ADU SAvg above bckgnd for 10 cols	
								26ci			
24000	4"							27ci	B4 SB pgm		
								28ci			
								29 30ci		MAX = 12K ADU / pixel	
								31 1ci			
* 20e/anpk stellexp for = str comps	6.90	set	still @	+00.8°C				32/33ci		294 303 xplot ● pixel Red @ pixel # 770 → ● pixel Blue	

87
PM Tues-Wed

Date 1993 Apr 6/7 Observers KK TH

SBIG Engineering
CCD FIBER Fed Setup

Emulsion Batches:
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.....
(USING 7 bundle → Sim slit)

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CFO 1566.fts	Trouble light FLAT					01 12W	+28°	Trouble Light	30s
67 70	FLATs x4 - more with Trouble Light above					Fiber Fed pinhole		"	30s
71	BIAS(4)								
72	Comp							FeNe Clear	10s
73	HD62509	07 39 12	+28 16	20 22 28					24s
74	"			20 24 40		01 26W			151s
75	Comp							FeNe clear	10s
76	Comp							FeNe clear	10s
77	HD87901			20 34 09					142
78	HD87901			20 36 19					206
79	Comp							FeNe	10s
~~80~~	~~BIAS(4) HD102494~~			~~21 28 57~~ ~~20 48 00~~					
81	HD89449	10 14 18	+19 59 00	21 40 36		00 13W			491
82	"			21 55 53		01 00W			2322
83	Comp							FeNe Clear	10s

Spectr. Temp. ..... Dome Temp./Hum. +66°C 46%H Transparency Conditions .. Part. Cloudy 88

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ..... note 0° on grating tilt scale = 45°.°. 52.6° = 7.5° on scale

90 CCD Gain CCDT → −100°C

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CCD Fiber Fed	1800 l/mm 62°		~~IIIa-J 5140Å~~	1ci	62° = 17.9° on grating scale	Peak ~~7K~~ ADU SBIG Rack 20,600 for Stellar	
				Actual λ	for 62° tilt		6340Å			450 0 100 102 1 1	
								1ci			
								2ci			
10K		1.14	KOSP					3ci	Std vel		
100K								3ci	"	1.088 AIRMASS	
								2ei		2000 ADU, strongest line	
								2ci		while moving scope	
100K								4ci	Telluric Std		
150K								4ci			
								2ci			
	2"							~~1ci~~	~~Std vel~~	part cloudy (thinly SC)	
~~43K~~		4.79	FGLV	[Guided with SBIG				5ci	Std vel	2KADU EArg above bkgnd.	
43K				" " "				6ci	[CCDT ≈ −85°C		
								7ci	and warming prematurely]	!	

89 pg #2

Date 1993 Apr. 6/7 Observers KK/Ta

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CF01584	Comp							FeNe Clear	10s
1585	Bias 5C4								
1586	HD 89449	10 14 18	+19 59 00	22 58 45		01 47 W			1462
1587	Comp							FeNe Clear	10s
1588	HD 87901	10 03 03	+12 27 22	23 38 22		02 19 W			312
1589	Comp							FeNe Clear	10s
1590	HD 106251	12 8.3	+10 49	23 51 57					1277
1591	Comp							FeNe clear	10
1592	bias 4X								
1593	HD 97603	11 08 48	+21 04 03	00 18 45		02 02 W			765
1594	Comp							FeNe Clear	10s
1595	HD 124897	14 11 06	+19 42	00 43 04		00 46 E			152
1596	Comp							FeNe Clear	10s
Fm 00486	ABCDI, EF HD 120245	13 43 11	+38 23 33	20055		00 03 E	+38	"N" mode	
	Seeing test			@					

Spectr. Temp. ..... Dome Temp./Hum. +04.6°C 54-5% Transparency Conditions . thin cloud . cirrus 90

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				Fiberfed CCD	1800 l/mm 63.5°		6563Å	8ci			
	~~2"~~							1ci		CCDT −100°C approx	
35K	2"	V 4.79	F6 IV					9ci	Std vel	Tn guided (clear mostly)	
								10ci			
158K								11ci	Telluric Std	33K ADU sum Σ AVG of 20 cols	
								12ci			
12.5K		5.79	A2m					13ci		5K ADU Σ Avg of 50 cols. above Bkground.	S/N 140/1
								2ci			
								1ci			
170K	2"	V 2.56	A4 V					14ci	KK pgm		
								7ci			
197K	2"	V −0.04	K2 III					15ci	Std vel	MAX 10.7K ADU	
								~~7~~ci	~~Std~~		
39×39	2"	V 6.95	K0 III	Int 4×67ms; 2×133ms		Above Fiberfed Hole			Dome SW, no wind.		
				ONLY 1 NE FAN on for past 2 HRS. Both on from start of night.							

91

pg#3

Emulsion Batches: .....

Date 1993 Apr 6/7 ..... Observers [T.K] ../T.n ..... (Stefan checking me) .....

.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CFO1597	HD161096	173830	+04 37	01 10 11					60s
1598	Comp							FeNe Clear	10sec
1599	BIAS(4)								
1600	FLAT	Regular source while moving Tel to meridian		01 27 20				TUNG Clear	
1601 1603	FLATS x4	using trouble light		01 37					10s
1604	Comp							FeNe Clear	
1605	HD125162	14 1235	+46 33 00	020206		00 51 W			988
1606	Comp							FeNe Clear	10s
1607	BIAS(4)								
	Note-Apr 7 afternoon			KK fiber fed focus tests					
CFO1608	in Board							FeNe Clear	
1609	out Board							"	

Spectr. Temp. ..... Dome Temp./Hum. +3.5°C 55.2% Transparency Conditions Sl. hazy 92

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. +1.28°C 58%

Exp. Mtr.	Seeing	Pte. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
73K	3"	2.71	KIII	ECD Fiber fed	1800l/mm 63.5°	F Rect Hole	6563Å	10ci	Std vel		
								7ci			
								7ci			
								16ci		≈ 6K max ADU	
								17ci		max 12K ADU CCDT = -100.4C still	
								7ci			
60K	<2"	4.25	AOp					5ci	KK pgm?	27.5K ADU Σ Avg of 50 cols s/k early star list	170/1
								7ci			
								1ci		CCD T @ -100.4°C	
										still -100.5°C @ 0250 EST	
	All to Perseus & WORM										
					600l/mm 31.0D tilt		3800Å				

93

Wed-Thurs

Date 1993 Apr 7/8 Observers KK / Tn

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CF01610	Comp						D. Hoser OUT	FeNe Clear	90s
11	Bias (4)								
12	HD34029	05 09 18	+45 54	20 59 30		04 40W			55s
13	HD34029 (Comp)	"	"	21 09 59				FeNe Clear	133s 55s
14	Comp			~~21 09 59~~				FeNe Clear	~~133s~~ 60s
15	comp							FeNe clear	60s
16	HD 106591	12 10 29	+57 35	21 30 55	x* 21 47 20	edit header.			985s
17	"	"	"	22 48 11					946
18	"			22 07 49					245
19	Comp			22 13 10				FeNe clear	60s
20	bias 4x			22 15 17					
21 → 23	FLATS x 3			≈ 2240			Diffuser IN	Tung Clear	150s

Spectr. Temp. ..... Dome Temp./Hum. 17.6°C 47.7°C Transparency Conditions ... Cloudy (SCAT OF) 94

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

360 0 501024 2 1 CCDFIRST

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				Fiber fed CCD	600 l/mm 31.77° tilt		4240Å	1ci			
								1ci		CCDT = −100.5°C	
G 305 K		V 0.09	G8III?+F					3ci	KH pgm	3.3K MAX	
165K		"	"					4ci	"	many lines >700 ADU MAX ≈ 2000 ADU	
								5ci			
								5ci			
1870	3"	V 3.31	A2 Van					6	"	Readout after Rearming CCD 3 after Reset	
12601								7			
912								8		cloudy	
								9Gi			
								1ci			
								10ci 11ci 12ci		MAX 15K ADU	
										At 23:40 CCDT = −100.4°C	

95
#1

Thurs - Fri

Date 93 April 8/9 - 93 ... Observers ... K.K. / Tn. / Eds. .....

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CE05912 -12	Focus Tests.								
	Edelle Flexure Tests with 3 different Levels of Camera clamping tightness								
CE05913	Flexure Tests (Comp)		+45 00	220156	09E	[redacted]			4s
5914	Comp		↓	220316	08E	[redacted]			4s
5915	[redacted] Flat				08E	[redacted]			2s
5916	Comp			220510 [redacted]	07E	[redacted]			4s
17	"			220603 [redacted]	06E	[redacted]			↓
18				220704		05E			
19				220850		04E			
20				221005		03E			
21				221100		02E			
22				221158		01E			
23				221320		00			
24				221358		01W			
25				221454		01W			

Spectr. Temp. ..... Dome Temp./Hum. +8.8°C..... Transparency Conditions .. Cloudy..... 96

Focus .....0.3438.....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				600 l/mm X grating echelle CCD	echele 18,00 x=.3987	60µ 600µ	λc=5140				
(non, Light, and moderate)					All graded	E=West	Tel movements by Tn. (Tn set clamping too)				
					NOTE HEIGHT Δ	60µ 400µ=0.225		1ci		0 = 128 1024 8 1 ccd fmt	
								2ci		NO CLAMPS	
								3ci		ie (The 2 camera clamps)	
								4ci			
								5ci		DOME MOVED	
										DOME MOVED W.	

97 #2 Th-Fri

Date 93-April 9/9 Observers KK/Th/Fkr

Emulsion Batches: .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
ce05426	Comp			221536		03W			4s
27				221614		04W			
28				221726		05W			
29	FLAT					05W			3s
	("LIGHT" CLAMPING NOW)								
30	Comp		+4500	222454		09E			4s
31				222819		08E			
32				222903		07E			
33				222943		06E			
34				223029		05E			
35				223111		04E			
36				223149		03E			
37				223238		02E			
38				223317		01E			
39				223412		00			

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions ... Cloudy ..... 98.

Focus ..... 0.2438 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

0 0 ~~5~~ 128 102 4 81.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
					Echelle 1800 x 13987	60u 400u	width height				
										Jim's "Light" Clamping ↓	
										Dome Moved West.	

99
#3 Th-Fri

Date 93-April 8/9 Observers [KK3/Th/Fbr

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
ce05940	Comp		+4500	223459		01W			
41				223542		02W			
42				223629		03W			
43				223716		04W			
44				223757		05W			
45	FLAT					05W			
"MODERATE CLUMPING"									
46	Comp			224421		09E			
47				224509		08E			
48				224809		07E			
49				224918		06E			
50				225008		05E			
51				225310		04E			
52				225531		03E			
53				225640		02E			

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions 100

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. +8.8°C 50.5%H

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
							5140				
										Moderate Clumping by Tip	
								5c.			
								Gi			
								7c.			
								8			

101

#4

Date 93-April 8/9 Observers KIC/Tm/FDr

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
ce05954	Comp		+4500	225834		01E	+45°	ThAr	4s
5				230255		00		1	1
6				230355		01W			
7				230448		02W			
8				230537		03W			
9				230634		04W			
60				230737		05W			

Spectr. Temp. ..... Dome Temp./Hum. +8.9°C 46.7%11 Transparency Conditions ... Cloudy 102

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
					600 l/mm xgrating		5140Å		Flexure Tests		
										Big Dome Tues West before this exp	

103
#1.

Emulsion Batches: .....
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.....

Date April 12/13-93 Observers KK/Fbr

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
ee05961-2	Focus Test								
63	Comp							ThAr	5s
64	HD61421	07 38 58	05 14 30	19 11 14	~~04 61 5W~~	00 46 15W			392s
65	Comp.							ThAr	5s
66	Comp							ThAr	8s.
67	HD34029	05 09 18	+45 54	192606		03 19 W			126s
68	Comp							ThAr	8s.
69	HD34029	05 09 18	+45 54	193017		03 23 W			126s
70	Comp							ThAr	8s
71	HD34029	05 09 18	+45 54	193607		03 32 20W			334s
72	Comp								
73-77	Flat x5							TUNG	5s
78	bias (4x)								
79	Comp							ThAr	8s.
80	HD47105	06 31 54	16 29	195530		02 30 W			276s

Spectr. Temp. ..... Dome Temp./Hum. 6.3°C/47-2% Transparency Conditions ... PARTLY CLOUDY 104
(1854)

Focus ..... 0.342 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

0 0 256 1024 4 1 ccd fmt

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst. 600 ln/mm X	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				ECHELLE CCD	18.08 X=3987	60μ 400μ	λ_c = 5150Å				
2010		V 0.34	F5 IV						STO. VEL.	~8K MAX.	
2020		V 0.09	G8III					5ci	KK		
1960		V 0.09	G8III					6ci	KK		
1935		V 0.09	G8III					7ci	KK		
						60μ 800μ					
1000		V 1.9	A0IV			60μ 400μ		4ci	KK.		

105
#2

Date April 12/13-93 Observers KK/FBr

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
ce05981	Comp								
82	HD47105	063154	16 29	200141		0237W			378
83	Comp							THAr	8s
84	HD47105	063154	16 29	200934		0244W			258
85	Comp							THAr	8s.
[illegible]	[illegible]							[illegible]	[illegible]
86	Comp							THAr	8s.
87	HD47105	063154	16 29	202235		0257W			264
88	Comp							THAr	8s.
89	HD47105	063154	16 29	202925		0349W			340s
90	Comp							THAr	8s
91	HD47105	063154	16 29	203738		0314			382
92	Comp							THAr	8s.
93	HD34029	050918	+4554	205140		0445W			182s
94	Comp							THAr	8s

Spectr. Temp. ..... Dome Temp./Hum. 4.6./76.2% Transparency Conditions .. PARTLY CLOUDY. 106

Focus .....0.242..... (1957)

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst. 600 g/mm X	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				ECHELLE CCD	18.09 X=.3987	60μ 400μ	λ_c=5150				
1032		V 1.9	A0 IV					5ci	KK	SEEING VERY POOR.	
1000								6ci	KK		
					19.00 X=.4000	60μ 400μ	λ_c=5130				
1000								4ci	KK.		
1057								5ci	KK		
1004								6ci	KK.		
2010		V 0.09	C8 III					4ci	KK.		
Same.											

107

#3

Date .April 12/13-93.. Observers ..K.K./.Fbr.....

Emulsion Batches:
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.....
.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
ceo 5995	HD34029	050918	+4554.	205640					132s
96	Comp							TWBr	8s.
97	HD34029	050918	+4554	210019					135s
98	Comp	actually a flat						TWBr	8s.
99-6003	Flat x 5							TUNG	5s
6004	Bias (4)								
5	Comp							TWBr	8s.
6	HD66751	07 5954	+7000	212517		025945W			2167
7	Comp							TWBr	8s
8	HD66751			220516					1565
9	Comp							TWBr	8s.
10	HD66751			223307		0355W			1449
11	Comp							TWBr	8s
12	Comp							TWBr	8s
13	HD102870	114529	+0220	230930					1293

Spectr. Temp. ..... Dome Temp./Hum. 3.5/49.4.96 Transparency Conditions ..... CLEAR ..... 108.

Focus .... 0.242 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
2020				ECHELLE CCD	19.00 X=0.4000	60μ 400μ		Sci	KK.		
2010											
						60μ 600μ					
100		V 6.48	dF8						KK		
100		V 6.48	dF8						KK		
100									KK	400MAX above bkg.	
		V 3.61	F9V						Std. Vel.		

109

#4

Date . April 12/13-93.... Observers . K.K./F.B.r.....

Emulsion Batches: .....
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
ce0601	Comp							ThAr	8s.
15	Comp							ThAr	8s.
16	HD137909	15 23 42	+ 29 27	23 38 51		1 55 E			270s
17	Comp							ThAr	8s.
18	Comp							ThAr	8s
19	HD137909	15 23 42	+ 29 27	00 29 55		01 24 E			1588
20	Comp							ThAr	8s
21	Bias (4)								
22-26	Flat x5	14 00 08	+ 29 27					TuNe	5s
27	Comp							ThAr	8s
28	HD137909	15 23 42	+ 29 27	01 19 06					1155
29	Comp								
30	Bias (4)								
31	HD137909	15 23 42	+ 29 27	01 42 22					1435

Spectr. Temp. ..... Dome Temp./Hum. 2.2°c / 59.1% Transparency Conditions ..... CLEAR 110
(2313)

Focus ..... 0.242 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				Echelle CCD	19.00 X=.4000	60μ 400μ					
1000		✓ 3.66	FOp					Sci			
~~1000~~											
					18.08 X=.4088	60μ 400μ	λ_c=5151			Note Echelle Tilt Change.	
1013		✓ 3.66	FOp					Sci			
						60μ 600μ=0.205				Telescope Moved to Recal spectrograph.	
					18.60 X=.4550		λ_c=4480				
1000		✓ 3.66	FOp								
1000											

111

#5

Date April 12/13-93 Observers KK/Fbr

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
ce06032	Comp							ThAr	8s
33	HD137909	152342	+29 27	020820					1200
34	Comp							ThAr	8s
35	bias 4x			02 32 28					
36-40	FLAT x5							Tung	

Spectr. Temp. ..... Dome Temp./Hum. 11.6°C/59.1% Transparency Conditions ..... HAZE - Some Cloud

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. (0208)

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				ECHELLE CCD	18.60 X=.4550	60μ 400μ	λ_c=4880				
1040										386 hung & rebooted	

113
#1

Date Apr. 13/14-93. Observers KK/Flov

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
ceo6041	Bias (4)								
42	Comp							ThAr	6s
43	HD47105	063156	1629	195508.					354
44	Comp							ThAr	5s
45-46	Focus Test.							ThAr	5s.
47	Comp								3s
48	HD47105	063156	1629	201700					385s
49	Comp							ThAr	3s
50	HD47105	"	"	202645					414
51	Comp							ThAr	3s
52-56	flats							Tung	1s
57	~~Bias~~ Bias(4)							ThAr	2s.
58	~~HD47105~~ Comp			205719				ThAr	~~382~~
59	HD47105			205719					83s
60	Comp							ThAr	2s.

Spectr. Temp. ..... Dome Temp./Hum. 4.1°C / 43.2% Transparency Conditions ..... CLEAR .....
Focus ..... 0.239 ..... (2051)
Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
					18.80 x=	60μ 800μ	λ_c = 6618				
										T = −125°C	
VAR											
150										ORDER # 86 (CENTRES ORD)	
150											
						60μ 800μ					
					18.20 x = .2800		did not change header!				
150											
150											

115

#2

Date ..April 13/14-93 Observers ....K.K./Fbr.....

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
ce06061	HD47105	063156	+16 29	21 01 08					137
62	Comp							TWAr	2s
63	HD47105			21 05 11					127
64	Comp							TWAr	2s
65	HD47105			21 09 30					107
66	Comp							TWAr	2s
67	BIAS (4)								
68-72	flats							Tung	2s
73	comp							ThAr	2s
74	HD95735	10:57 9	+36°38'	21:45:40					2683
75	Comp							ThAr	2s
76	Comp							ThAr	2s
77	HD87901	100303	+12 27 22	223605					72
78	Comp							ThAr	2s
79	HD87901			223905					72

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....CLEAR..... 116

Focus .....0.239.....

Spectr. Temp. ..... Dome Temp./Hum. .....

0 0 256 1024 41 ccdfmt

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
500						5ci			KK		
500						6ci			KK		
500						7ci			KK		
						3ci					
200		V= 7.60	M6			4ci			Asm/Spec		
1000						5ci			TELLURIC.		
1000						6ci			TELLURIC		

117
#3

Date April 13/14-93 Observers K.K./F.D.R.

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
ce06080	Comp							TWIr	2s
81	HD87901	100363	122722	224137					72
82	Comp								
83	Comp							TWIr	2s
84	HD137909	152342	+2927	224959					707
85	Comp							TWIr	2s
86	HD137909	152342	+2927	230308					909
87	Comp							TWIr	2s
88	HD137909	152342	+2927	231953					680
89	Comp							TWIr	2s
90	Comp							TWIr	2s
91	HD124897	141106	1942	233529					28
92	Comp							TWIr	2s
93	HD124897			233721					
94	Comp								

Spectr. Temp. ..... Dome Temp./Hum. 3.19/45.4% Transparency Conditions ..... CLEAR 118

Focus ..... 0.239 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				echelle CCD			λ_c=6610				
1000						7ci			TELLURIC		
1000		V 3.66	Fop					4ci	KK		
1090		V 3.66	FOp					5ci	KK	scattered light level = 65 ADU	
1000		V 3.66	FOp					6ci	KK		
1000								4ci			
1000								5ci			

119
#4

Date ... April 13/14-93 Observers ... KK/FGr

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CE06095	HD134897			23 39 33					
96	Comp							ThAr	2⁵
97	Comp			23 47				ThAr	3⁵
98	HD 87901	10 03 03	12 27 22	23 48 34					
99	comp							ThAr	3⁵
CE06100	HD87901			23 59 01					375
01	comp							ThAr	
02	HD87901			00:07:21					401
03	Comp							ThAr	3⁵
04	comp							ThAr	3⁵
05	HD124897	14	+19						
06	Comp							ThAr	3⁵
07	HD124897			00 24 55					38
08	comp			00 26 43				ThAr	
09	HD 124897			00 27 45					40

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions 120

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
1000											
				Echelle → 16.80			changed 6619		TELLURIC	AIRMASS = 1.52	
165		1.36	B/V							max 6000/pixel	
150		"	"					6			
150		"	"					5		Airmass 1.63	
160								4		12000 ADU	
100								5			
100								6			

121 pg 5 Thes / Wed

Date Apr. 13/14 1993 Observers KK / tbr

Emulsion Batches: .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CE0610	comp			0029 29				ThAr	3
11	bias (4X)			00 33 22					
12	comp			00 35 01				ThAr	3s
13	HD 137 909	15 23.7	+29° 27′	00 35 40					1594
14	comp							ThAr	3s
15	HD137 909	1523.7	29°27′	0 0 0449					1690
16	comp							ThAr	3s
17	HD137909	1523.7	29°27′	0134 51					1648
18	comp							ThAr	3s
19-23	flat							tung	1s
24	comp							ThAr	2s
25	HD 122742	B 58.6	+11 16	02:14:15					1800s
	comp								
	Bias(4)								

Spectr. Temp. ..... Dome Temp./Hum. +2.6C 47.9% Transparency Conditions ... clear, except [redacted] Sc 22

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
						600μ	6619				
135	4"	3.93	POP							4800 ADU/pix max	
135											
134	"	"	"								
						800μ					
27		6.21	G8V			600μ				500 ABOVE BKG. MIDDLE ORDER. ~6618	

123

Thurs/Fri

Date 1993 Apr 15/16.... Observers [RK]...Tn.....

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
ce06128 6129	Focus Test	inboard/outboard HART		~19		3 00W	+10°	ThAr	.8/.8
	1993APR17/18 Tn Echelle CCD. Tel non movement tests using BATCH "NMTEST"								
6130 – 6151	Comps 22 sep RATED BY 30 mins			02 17	12 57	0000	-31°	ThAr	.8/.8
					Topup at 14 EST		T=+8.7°C Dome		
6152	Comp after Tel Back to -31°0 hrL			14 29		0 0	-31		.8sec
6153 6163	Comps 11 sep by 30 mins.			14 30	19 38	0 0	-31		.8sec
6164	Comp			20 0512					
6165	BIAS(4)			20 1939					
6166	FLAT after 1st TOUR			21 1451		Back to after tel Raised 0 0	-31		.5sec
6167	Comp after Last TOUR		No Movement	22 0050		0 0	-31		.8sec
6168	"			23 0458					
6169	"			23 3216					
6170	"			00 1005					
6171	"			00 0712					

Spectr. Temp. ..... Dome Temp./Hum. +12.0°C 80.7%H Transparency Conditions .. PART. cloudy .....

Focus .. 220 .... with R.G.610 Filter

Spectr. Temp. *Remember that Filter alters focus ..... Dome Temp./Hum. .....

cLAMBDA 0 0 128 1024 81 for Focus

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst. 19.05	× Grating/ Tilt	Slit	~~Emulsion~~	P.H.	Program	Remarks	Quality
				Echelle CCD	300/m width 60m CROSS Height 400m = .225	60m	6560Å	5ci 6ci	.5635 x tilt Focus test	84 87 pcols 75 84 xplot 2.0 pixel out beyond Red	
..	Comp Done written, followed by 10 min DARK, Repeated 22 times. (CCDT at Bottom)										
ccsing 100TSCALE				Echelle CCD	300/m W= 60m CROSS H= 400m		6430Å		.5635 x tilt, 19.05 Echelle Tilt	DomeT +8.7°C at START	
									middle ORDERS	8:1 binning	
	Batch "NIGHTEST" Run again									DomeT +8.7°C at start	
										DomeT = +5.4°C at end.	
										CCDT = −12.5°C Dome 5.2°C	
Tel Raised for both TOURS,											
								3		Dome +4.7°C	
								7		DomeT = +4.6°C	
								8ci		DomeT = +4.5°C	
								9			
								10		DomeT = +4.3°C	

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Emulsion Batches: .....

Date 1993 Apr. 22/23 .... Observers . Hdy / I. Tn. / F. Ker. .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC13 326 327	Focus Test (DEKKER NOT IN)			2023		0 0	2+30°	FeAr	40/70
328	Comp								
29	HD87901	100303	122722	205202					738
30	Bias								
31	HD87901	100303	122722	210612					916
32	Comp							FeAr	60s
33 - 35	Bias Flat x3							TUNG A=½	4s
36	Bias (4)								
37	Dark (120.s)			212808					
38	BIAS(4)			214823					

Spectr. Temp. ..... Dome Temp./Hum. +6.9°C ... 39% Transparency Conditions ... Semi cloudy .....

Focus ... ~~6.85~~ ... 6.85 .....

Spectr. Temp. ..... Dome Temp./Hum. +6.0°C ... 48% completely cloudy

c LAMBDA 480 0 50 1024 41 CCDFMT

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	1800 l/mm G=5530	2Sec FULL	5880	3ci 4ci		Stellar us/ ~~Blue~~ Red	
20K									Telluric Std	10480 ADU cloudy NO TRAILING.	
17.2K									Telluric Std	TRAILING cloudy	
										Hum = 40.2%	
										10.5K MAX	
								7ci			
								1ci		Dome T +6.5°C	

127 pg#1 Fri Sat

Emulsion Batches:

Date 1993 Apr 23/24 Observers [Bln]. Fbr. /Tn.

NOTE CSS 386 Time 22 secs ahead of W.W.V. Time

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination (not corrected)	Comparison Type/Filter	Comparison Exp.	
ABCD; EF Fm00487	HD85373	09 4618	+38 24	=20 20		=00 18W	+38°	"N" mode		3
ABCD EF Fm488	HD93271	10 4106	+43 34	=21 00		00 05W	+43 04	'N' mode		3
CC13339 340	Focus Test			21 46		01 28W	+12°	FeAr Clear	60/80	Sep
341	Comp							FeAr Clear	60sec	
342	HD87901	10 0303	+12 2722	21 5717					328s	33
343	Comp							FeAr Clear	60sec	
344	BIAS [4]									
345	Comp							FeAr Clear	60s	
346	HD79158	09 07 16	43 37	22 06 55					280s	14
347	Comp							FeAr Clear	60s	
348	HD 79158			22 1407					299s	14
349	Comp							FeAr Clear	60s	
350	HD79158	09 0716	+43 37	22 21 40					331	15
351	Comp							FeAr Clear	60s	
352	HD79158			22 29 34					323	14

Spectr. Temp. ..... Dome Temp./Hum. +10°C 32%H Transparency Conditions .. FINE .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Note - Because of shutter (CCD) orientation, Window Heater not connected. Should be no problem due to Low RelH

Note Re Seeing test. VERY High NNW wind during DAY

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst. Integrate	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
39x39 pinholes		V 6.52	FOV	4x67 msec +2x133 msec	above clocked	250u OUT			Seeing test	Wind Light now Dome West SWest	
39x39 Pinholes				"	"	"	6600Å		Seeing test	Dome WNW, No Wind	
Set 6.80		T = +8.9°C			1800 l/mm G=6055	250u [clocked in]	Hd	3ci 4ci	Focus test	480 0 50 1024 4 1 CCD FMT	
								5ci			
33K								6ci	Telluric Std		
								7ci			
								1ci		BIAS(4) Dome T +8.7°C	
								8ci			
14K	3"	V 5.32	B8 V					9ci	Bln pgm	80K photons ΣAvg above background	
								10ci			
14.3K								11ci	Bln pgm		
								12ci			
15K								13ci	Bln pgm		
								14ci			
14.3K								15ci	Bln pgm		

129 pg #2

Date 1993 Apr 23/24 Observers EBlw J/Tw/Flor

Emulsion Batches: .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC13353	Comp							FeAr Clear	60s
354	HD 79158			22 37 29		3 19 W			277
355	Comp							FeAr Clear	
356	Bias (4)								
357-359	Flat x 3							Tung Δ=½	4s
360	~~HD 79158~~ Comp							FeAr Clear	60s
361	HD 79158			225107					277
362	Comp							FeAr Clear	60s
363	HD 79158			225850					288
364	Comp							FeAr Clear	60s
365	HD 79158			230659					286
366	Comp							FeAr Clear	60s
367	HD 79158			231447					299
368	Comp							FeAr Clear	60s.
369	HD 79158			232228					348

Spectr. Temp. ..... Dome Temp./Hum. +8.6°C 35% Transparency Conditions ... Fine 130

Focus ... 6.80 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

CLAMBDA = 6600

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	~~Emulsion~~	P.H.	Program	Remarks	Quality
				CASS CCD	1500l/mm G6055	250u Decker	6600Å Ha	16ci			
14K								17ci	Blu pgm	Airmass = 1.228	
14K						5		5ci	Blu Pgm	+8.3°C / 35.8%	
14K									Blu Pgm		
									Blu Pgm	CCD T = -102.2°C	
14K	2-3"								Blu Pgm		
14K										Airmass = 1.37	

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Pg 43.

Emulsion Batches: .....

Date 93 Apr 23/24 ..... Observers F Blm J Tn / Flor .....

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Reminder, That Header times will be ~25 secs. ahead of WWV time.

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.	
CC13370	Comp							Fe Br Cu	60s	
371	HD 79158	09 07 16	+43 37 48	23 31 05					355	14
372	Comp							Fe Ar Clear	60s	
373	BIAS (4)									
374	HD 79158			23 40 00					342	14
375	Comp							Fe Ar Clear	60s	
376	HD 79158			23 48 13					312	14
377	Comp							Fe Ar Clear	60s	
378-383	FLAT x 6					04 35W	+43 15	TUNG A = 1/2	4s	
384	BIAS (4)									
385-6	FOCUS TESTS (λ_e = 5880)									
387	BIAS (4)									
388	Comp							Clear Fe Ar	60s	
389	FLAT							TUNGSTEN	As req	
390	HD150484	16 36 12	+00 41	00 23 10		02 16E			650s	75

Spectr. Temp. ..... Dome Temp./Hum. 8.1°C/36.5% Transparency Conditions ..... CLEAR → 5/hazy 132

Focus ..... 6.80 .....

Spectr. Temp. ..... Dome Temp./Hum. 7.4°C 38.8%H

CLAMBDA

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
		V		CASS CCD	1800 G6055 with Dekker	35u	6600Å				
14.2K	4"	5.32	B8III					18c;	Bln Pgm		
								19c;			
								1c;		Pane T = +7.9°C	
14K								20c;	Bln Pgm		
								21c;			
14K								13c;			
								4c;		MAX 14K ADU/pixel	
								Denver	Topup complete by 00 10 EST		
	T = +7.4°C		set 6.80 still								
					1800 α = 5530	250u dekker	λ: 5880				
										12.7K MAX	
755	5"							5c;	Hdy Pgm.	1.68 AIRMASS (6K photons above Bkgnd)	

133 pg #4

Date . 1993 Apr 23/24 . Observers . [Hdg] . T.n. / F.Br. . . . . .

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC13391	HD150484	16 36 12	+00 41	00 34 40					650
92	"			00 46 17					650
93	"			00 57 26					650
94	"			01 08 36					650
95	BIAS (4)								
96	Comp							FeBr Clear	60s
97	Flat							TUNG 1/2	4s
98	HD150484			01 23 18					650
99	"			34 29					650
400	"			45 39					650
401	"			56 49		00 41 E			650
402	"			02 07 59					650
03	BIAS (4)								
04	Comp							FeAr Clear	60s
05	Flat							TUNG 1/2	4s

Spectr. Temp. ..... Dome Temp./Hum. 17.3°C ... 38.7% Transparency Conditions Fine ... v. sl hazy ...

Focus ... 6.80 .....

Note That CCD anti fog window heater not connected tonight.

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Pre Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
713	3"-5"	8.34 - 8.89	G2V +CF90?				5880	22ci	Hdg pgm		
780										Repeat Star650.BAT	
759											
875								23ci			
970	3"									Repeat Star650.BAT·5	
950											
1006										"	
1060	3"									1.401 AIR MASS	
1100								5ci			
								1ci		Dome T = +6.6°C	

135
#5

Emulsion Batches: .....
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Date 93 Apr 23/24 Observers [illegible]

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC13406	HD150484	16 36 12	+00 41	02 23 23					650s
7	"			02 34 33					"
8	"			02 45 43					"
9	"			02 56 53					"
10	"			03 08 03					"
11	BIAS(4)								
12	FLAT							TUNG Ap=1/2 FeAr Clear	45s
13	Comp								60s
14	HD150484			03 24 15					650
15				03 35 23					"
16				03 46 33					"
17			?50	0853					"
18									"
19	BIAS(4)								
20	Comp							FeAr Clear	60sec
21	FLAT						Ap=1/2	TUNG	45sec

Spectr. Temp. ..... Dome Temp./Hum. +6.6°C ..... 40% Transparency Conditions ..... CLEAR 136

Focus ..... 6.80 ..... increasing haze

Spectr. Temp. ..... Dome Temp./Hum. ..... CLAMBOH

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	~~Emulsion~~	P.H.	Program	Remarks	Quality
1270							~~5600H~~ 5880H (In Dec 93)	5c;	Hdy pgm	Repeat x5	
1175											
1340											
1500	3"										
1500											
								1c;		Dome T = +6.5°C	
								2c;			
								2.5c;			
1200								2.6c;			
1420											
1234											
1255											
1110								2.6c1			
								1c;			

137
#6

Date 9.3.Apl 23/24-93 Observers ..I.Hdy.J.In./.Fbr....

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc13422	Comp							Fsr Clear	60
423	HD177724	190049	+1342	042720					
424	HD177724	"	"	-"-					100s
425	Comp								
426-428	Flat x 3							Fsr Clear	60s
429	Bias (4)							TONI Y2	4s

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions ..... HAZE 130

Focus ..... 6.80 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
35K									TELLURIC		
40K											
					ALL TO PRESERVE WORM.						

139 pg#2 Sun/Mon

Date 1993 Apr. 25/26 Observers Hdg./T.A.

Emulsion Batches: .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
430	BIAS(4) *								
431	Comp							Fe Ar Clear	60s
432	HD87901	10 03 03	+12 27 22	00 12 46		W			44
433	HD87901			00 20 42		04 34 W	Limit west		1322
434	Comp							Fe Ar Clear	60s
435 437	FLATS x 3					04 34 W	+12 04	Tung A=1/4	
438	BIAS(4) *								
439	FLAT							Tung A=1/4	12s
440	Comp							Fe Ar Clear	60s
441	HD150484	16 36 12	+00 41 00	01 01 37					540s
442	"			01 19 11					659s
443				01 30 46					675
444				01 48 54					650
445				02 00 13					650
446	BIAS(4)			~~02 11 34~~					

Spectr. Temp. ..... Dome Temp./Hum. 16.1°C ..... 71%H Transparency Conditions .. gradual clearing ... 140

Focus .... 6.80 .....

Spectr. Temp. ..... Dome Temp./Hum. 14.4°C 77.2%H

CLAMBDA

Exp. Mtr.	Seeing	P.V. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	1800 G6035 with decker	2.0m	6563Å	1ci			
								3ci		ccd T = -100.6°C	
20,225		1.36	B7V					4ci	Telluric Std	half cloudy	
16924								5ci	n	clearing a tend	
								6ci			
								7ci		MAX 12.5 K ADU/pixel	
								1ci		Dome T = +5.7°C	
								8ci		10.9 k max	
								9ci			
169	4"							10ci	Hdg pgm	medium cloud 35/1 S/N	
165								11ci		semi cloudy	
121								12ci			
256								13ci			
168								14			
								15ci			

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892

Date 1993 Apr 25/26 Observers Hdg. I.T.m.

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC1344	Comp							FeAr Clear	60s
48	FLAT							TUNG Ap=1/4	13s

Spectr. Temp. ..... Dome Temp./Hum. +4.4°C 77.3% Transparency Conditions Cloudy mostly 142

Focus 6.80

Spectr. Temp. ..... Dome Temp./Hum. ..... Completely SO.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
						50	6563	3c			
								7c			
							All to worm & Persons				

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pg#1

Emulsion Batches: .....

Date 1993 APR 26/27 Observers Holy / Tu ....

At OEST Instal Tim CS386 Time ahead 28 secs

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC13449 450	Focus Test	Comp / Stellar Hour Tim Posns			19 52	0 20W	+43		30/60
451	BIAS (4)				19 56				
452	Comp							FeAr Clear	60s
453	HD87901	10 03 03	+12 27 22	20 05 21	~~20 05 21~~				55s
454	"			20 07 16	~~20 07 16~~				69s
455	Comp							FeAr Clear	
→ 456 45B	FLATS x 3							Tung Ap=1/4	13s
459	BIAS (4)			20 14 38					
460	Comp							FeAr Clear	250sec
461	SN1993J	1950 09 51 19	+69 15 27	20 37 45					986
462	SN1993J			20 54 45					1180
463	Comp							FeAr Clear	60sec
464	BIAS (4)								
465	Comp					05 03E		FeAr Clear	60s
466	FLAT							Tung Ap=1/4	12s

Spectr. Temp. ..... Dome Temp./Hum. +1.5°C 50% H Transparency Conditions ... FINE .....

Focus ... 6.90 ..... Temp dropping Fast

Spectr. Temp. ..... Dome Temp./Hum. ..... 480 0 50 1024 4 1 CCDFMT

Tel NORMALIZED on HD79158

Exp. Mtr.	Seeing	Pl. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
T=+4.0°C				CASSCCD	1800 l/mm G 6035	250 darker	6563A	3ci 4ci	Focus	CCDT ⇒ −100°C	
								1ci		Dome T = +3.7°C	
					1800 l/mm G-6025	⇒ more central	6563A	5ci			
37K		1:36	B7V				6563A	6ci	Telluric Std		
40K								6ci		10.6K ADU max	
								7ci			
								8ci		11.5K ADU max	
									HR3771 used to note offsets for SN1993J		
								9ci	HR 3771 offsets	Δ RA +00 00 10 Δ dec +00 01 06	
100	4"	≈11		Field Drawn				10ci	SN1993J hopefully	Δ RA +00 00 10 Δ dec −00 00 03	
114								11ci	South 160" and west ≈ 6 sec RA from M81		
								12ci	As TAU BULL mentioned		
								1ci		Dome T +2.3°C	
								13ci			
								14ci		13K ADU max	

145 pg 2

Emulsion Batches:
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Date 1993 Apr 26/27 Observers Hdg./J.n...t.mki....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cci3467	HD 150484	16 36 12	+00 41 00	21 38 10		4 48E			65o
468				4925					67s
469				22 01 10					65o
470				22 12 19					〃
471				22 23 29					〃
472	BIAS (4)								
473	FLAT							TUNG Ap 1/4	12s
474	Comp							Fe Ar Clear	60s
475	HD 150 484			22 39 04					66s
476	〃			23 50 43					65s
77	〃			23:01:51					〃
78	〃			23:13:01					〃
79	〃			23:24:11					〃
80	BIAS (4)								
81	Comp							Fe Ar Clear	60s
82	FLAT						TUNG	Ap 1/4	12s

Spectr. Temp. ..... Dome Temp./Hum. +22°C 47.2% Transparency Conditions ... V.s! hazy ... 146

Focus ... 6.90 .....

Spectr. Temp. ..... Dome Temp./Hum. ..... C 44mBDA

Exp. Mtr.	Seeing	Pg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	~~Emulsion~~	P.H.	Program	Remarks	Quality
250	8" → 7"	8.34 → 8.84	G2V + F9V?	CASS CCD	1800 l/mm G6025	350u decker	6563Å	15c;	Hdy pgm	4.68 Airmass	
285								16c;			
330	7.8"							17		R x 3	
380	7"										
420								17c;			
								1c;		Dome T = +1.7°C	
								18c;			
								19c;			
440								20c;	Hdy pgm		
~~450~~										Repeat x 4+	
~~460~~ 480											
450											
460	5"							20c;			
								1			
								21			
								22		13K ADU MAX	

147
pg#3

Emulsion Batches:

Date 1993 Apr 26/27 Observers Hdg 24/19" / T.n.

CS386 Times 28 secs ahead of WWV Time

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC13483	HD150484	16 3612	+00 41 00	23 3918		0248E			650s
84				~~23~~ 5028					"
85				00 0137					"
86				1247					"
87				2358					"
88	BIAS (4)								
89	FLAT							Tung Ap=1/4	12s
90	Comp							feAr clear	60s
91	HD150484			00 3856					650s
92				5005					"
93				01 0115					"
94				01 1225					"
95				01 2335					"
96	BIAS (4)								
97	Comp							feAr clear	60s
98	FLAT						Ap 1/4	Tung	12s

Spectr. Temp. ..... Dome Temp./Hum. +1.3°C 51% Transparency Conditions .. Fine 148

Focus ..... 690 .....

Spectr. Temp. ..... Dome Temp./Hum. +0.4°C 57% CLIMBDA

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	~~Emulsion~~	P.H.	Program	Remarks	Quality
470	6-8"			CASS CCD	1800 l/mm G=6025	250u decker	6563Å	23c	Hdy pgm	1.883 Air mass	
480										PROB in eclipse (narrow Hα)	
~~600~~											
530											
620											
										Dome T = +1.1°C	
								24		12 K max	
								25.			
690	5"							26			
730										OBvious Broader Hα	
780	6"										
790											
800								26c			
								1c			
								27			
								~~25~~ 1c		12-4 K max	

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Emulsion Batches: .....

Date 1993 Apr 26/27... Observers Hdg.....J.n..... .....

.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC13499	HD150484	16 36 12	+00 41 00	01 39 16		00 48E			65s
500	"			01 50 26					4
01	"			02 01 37					4
02	"			02 12 47					4
03	"			02 23 57					4
04	BIAS(4)								
05	Comp	After Reset of Sp	controller [Grating disabled anyway]					Feat clear	60s
06	Flat							TUNG Ap=1/4	12s
07	HD150484			02 40 52		00 14W			650
08	"			02 52 02					4
09	"			03 03 12					4
10	"			03 14 23					4
11	"			03 25 33					4
12	BIAS(4)								
13	FLAT						Ap=1/4	TUNG	14s
14	Comp						Clear	Feat	60s

Spectr. Temp. ..... Dome Temp./Hum 10.3°C 57% Transparency Conditions Fine 150

Focus ... 6.90 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
900	5"						6563A	28c;	Hdy pgm		
930										Hα starting to look dbl	
1000											
sum of 2											
1920								28c;			
								1c;		All BIAS/4 Really clean. Dome T = 0.0°C	
								29c;			
								~~30c;~~		11.2K ADU max	
900								30c;		1.376 Air mass	
870										OBV Hα dbl	
870	4"										
890											
890								30c;			
								1c;			
								34c;		12.7K ADU/Pixel max	
								32c;			

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Emulsion Batches: .....

Date 1993 Apr 26/27 Observers Hdy ITA .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC13515	HD150484	16 36 12	+00 41 00	03 41 23					65s
16				03 52 34					"
17				04 03 44					"
18				04 14 58					
19	Comp							FeAr Clear	60s
20	FLAT							TUNG Hp=1/4	14s
21	BIAS(4)								
22	Comp							FeAr Clear	3.50s
23	HD177724	19 00 49	+13 42	04 33 05					158s
24				04 36 02					161
25	Comp							FeAr Clear	60s
~~26~~ → 28	FLATS x3								14s
29	BIAS(4)								

Spectr. Temp. ..... Dome Temp./Hum. 00.0°C ... 63% Transparency Conditions . Fine 152

Focus ... 6-90 .....

Spectr. Temp. ..... Dome Temp./Hum. -00.2°C 64% (continued)

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
900	4'					25μ	6563	33c;	Hdg Pgm	R x 3 CCDT = -101.8	
910										Hα not dbl now (reducing asymmetric)	
880											
860								33c;			
								34c;			
								7c;		13.6K max	
								1c;		↓	
								35c;			
38K		V 2.99						36c;	Telluric Std	1.16 AIR MASS MAX 9K ADC	
40K								36c;	"	12.5 max	
								35c;			
								37c;		12.7 max	
								1c;		CCDT -100.2°C	

153 pg #1 Tues - Wed

Emulsion Batches: .....

Date 1993 Apr 27/28 Observers Hdg / Tn ....

Note CS 386 Time still fast, ahead by 30 secs

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC13530									
531	Comp / stellar	Hartman test		20 09		00 10W	+12	FeAr Clear	20/60
532	Comp							FeAr Clear	40s
533	HD87901	10 03 03	+12 27 22	20 23 03					25
534	Comp								40
535	BIAS(4)								
536	Comp							FeAr clear	40s
537	SN1993J in M81	09 55 19 (1950)	+69 15 27	20 36 28		01 07W	+69 03 33 (Encoders)		1170
538	"			20 57 01					720
539	Comp							FeAr Clear	40s
540									
542	FLATS x 3	at SN1993J posn						Tung Ap=4/8	9sec
543	BIAS(4)								
544									
545	Focus	Comp / stellar				01 53W	+12°	FeAr Clear	40/80
546	Comp	[Then BIAS(4) CC13547]						FeAr Clear	60s
548	HD87901	10 03 03	+12 27 22	22 08 33					58
549	"			22 11 37					
550	Comp							FeAr Clear	60s

Spectr. Temp. ..... Dome Temp./Hum. +6.2°C 33% Transparency Conditions ... Part Cloudy ... 154

Focus .. 7.15 .. for .. 600 l/mm

Spectr. Temp. ..... Dome Temp./Hum. ..... CHAMBER CCD T -> -100° By 20 10 EST

Exp. Mtr.	Seeing	Rel. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
Set 7.15				CASS CCD	600 l/mm G3085	25u decker	6530Å	3ci 4ci	Focus test	CCD FMT (520 0 50 1024 4 1 J) ↗ RANGE 6215 - 6700Å	
								5ci			
18K		1.36	B7V					6ci			
								7ci			
								1ci			
								8ci			
160	<2"	>11						9ci		Δ RA +00 00 10 SI Hazy Δ dec +00 00 48	
100								10ci	In TV guidecam Fld Aquisn	(Fainter Than NE Fld Star	
								11ci		SAME mag as SE Fld Star) View	
								12ci, 13ci, 14ci		MAX 10K ADU	
								1ci			
T=	+3.5°C +3.0°C		Set	6.90	1800 l/mm G=6025	25u decker	6563Å	15ci 16ci	309-318x	CCD FMT 460 0 50 1024 4 1	
								17ci			
40K		1.36	B7V					18ci	Telluric		
40K								19ci	n		

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pg #2

Date 1993 Apr 27/28 Observers Hdy – Tq

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CCD 13551 → 553	FLATS x3					02 16W	+12°	Tung Ap=1/4	
554	BIAS(4)								
555	FLAT							Tung Ap 1/4	12s
556	Comp							Fe Ar Clear	60s
557	HD150484	16 36 12	+00 41 00	22 27 13					650s
558	"			22 38 23					"
Person 559	"			22 49 33					"
560	"			23 01 01					"
561	"			23 12 09					600
562	BIAS(4)								
563	Comp							Fe Ar Clear	60s
564	FLAT							Tung Ap 1/4	12s
565	HD150484			23 27 44					"
566	"			23 39 40					
567				23 51 07					

Spectr. Temp. ..... Dome Temp./Hum. +31F 37% Transparency Conditions incr. cloud 156.

Focus 6-90

Spectr. Temp. ..... Dome Temp./Hum. ..... C-LAMBDA

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	~~Emulsion~~	P.H.	Program	Remarks	Quality
						250μ	6563Å	20ci			
								1ci			
								21ci		14 K max ADU	
								22ci			
190	3"							23ci	Hdy pgm		
208											
								25ci			
								24ci		cloud at end	
								1ci		+2.9C Dome T	
								25ci			
								26ci		13K max	
500 Hg								27ci			
260										Thick cloud.	
235		MAY HAVE BEEN WASTED									

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pg#3

Emulsion Batches:
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Date 1993 Apr 27/28 .... Observers Hdg./Mkt./Tn .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC13568	HD150484			00 02 42					650
69	"			00 14 06					660
70	BIAS(4)								
71	FLAT							TUNG Ap 1/4	
72	Comp							FeAr Clear	605
73	HD150484			00 29 42					650
74	"			00 40 52					650
75	"			00 52 21					671
76	Comp			01 03 44				FeAr Clear	605
77	FLAT							FeAr Ap=1/4	
78	BIAS(4)								

Spectr. Temp. ..... Dome Temp./Hum. +26°C 38%H Transparency Conditions Semi cloudy 15B.

Focus ... 6:90 .....

Spectr. Temp. ..... Dome Temp./Hum. +22°C 43%

Exp. Mtr.	Seeing	Pt. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
205		8.34 8.84	G2V +F9V?		1800 l/mm G=6025	250μ decker	6563B	27c	Hdy	cloudy PARTLY	
385	2"							28c			
								1c			
								29			
								30			
233								31c	Hdy pgm		—
200								32c		cloud again	
185								32c			
								33c			
								34c		1.1.4k max	
						All to Perseus & WORM					

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Wed - Thurs

Date 1993 Apr 28/29 Observers T.n./Hdy

Emulsion Batches:

CS 386 Time set to WWV from MMT PC

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
~~79~~	~~BIAS(4)~~								
CC13580	BIAS(4)	(2 Bias's written)		21 27					
81									
82	Focus test	Comp/stellar posns		21 21				Fehr Clear	60/120
83	Comp			21 37 46				Fehr Clear	60s
84	HD 87901	10 03 03	+12 27	21 33 47					83
85	~~Comp~~ HD 87901							~~Fehr Clear~~	98s
CC13586 → 588	FLATS x 3							Tung Apl/4	12s
589	BIAS(4)								
590	DARK 20 min			22 10 57		≈4E	0°		
591	BIAS(4)								
592	FLAT							Tung Apl/4	12sg
593	Comp							Fehr Clear	60s
594	HD 150484	16 36 05	+00 41 00	22 38 05					650
595	"			22 49 15					650
596	"			23 00 43					"
597	"			23 11 53					"
598	"			23 23 03					"

Spectr. Temp. ..... Dome Temp./Hum. +8.5°C 56%H Transparency Conditions .. incr. Haze & closed 160

Focus 6.80

Spectr. Temp. ..... Dome Temp./Hum. ..... CLAMBOX

clouding in by 23 EST

Exp. Mtr.	Seeing	Pr. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	1800 G6025	250u data	6563Å				
Set 6800		T = +8.2°						3ci 4ci		"stellar" VV st Red & Blue ~~No Filter for comp~~	
~~Flat~~								5ci	SA 112 93	~~focus~~, ~~Fun image~~	
28K								6ci	Telluric Std	MAX 10K	
30K								7ci			
								8ci		MAX 11.5K ADU	
								1ci		Dome T +8.0°C	
								9ci			
								1ci			
								10ci		12.9K ADU MAX	
								11ci			
225	3.5"	8.34 - 8.84	G2V + F9V ?					~~12ci~~	Hdg pgm		
300								12cj			
275								13cj			
230											
180								13ci		cloudy	

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pg#2

Date 1993 Apr. 28/29. Observers Hdg. I.Tq.....

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc13599	BIAS(4)								
600	Comp							Feat Clear	60s
601	FLAT			23 37 15				Tung Ap 1/4	12s
602	HD150484	16 36 12	+00 41	23 40 24					650s
603				23 51 50					"
604				00 02 59					"
605				00 14 10					"
606				25 20					"
607	FLAT							Tung Ap 1/4	12s
608	Comp							Feat Clear	60s
609	BIAS(4)								
610	HD150484 v	16 36 12	+00 41	00 40 23					650
611	" } redit			00 51 34					"
612	" } v			01 02 44					"
613	"			01 14 17					
614	"			01 25 27					

Spectr. Temp. ..... Dome Temp./Hum. +8.0°C 53.2% Transparency Conditions Part → mostly cloudy 162

Focus 6.80 .....

Spectr. Temp. ..... Dome Temp./Hum. ..... c LAMBDA

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	1800 l/mm w decker	2.50"	6563Å	1ci			
								14ci			
								15ci		12.8K max	
230								16ci	Holy Pgm	thin cloud	
244								17ci		thick haze now	
184								u			
216								u			
280								17ci			
								18		12.25 max	
								19			
								1ci		Dome T. 8.0°C	
313	3"							20ci		cloud at end	
238								"		mostly cloudy	
270								20ci			
365								21			
								21ci			

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Emulsion Batches: .....

Date 1993 Apr 28/29 .... Observers . Hdg TTs ....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC13615	BIAS(4)								
616	Comp							FeAr Clear	60s
617	FLAT							TUNG Ap 1/4	12s
618	HD 150484			01 45 25					650s
619	"			01 57 12					650s
620	"			02 09 07					650s
621	"			02 20 29					650s
622	FLAT							TUNG Ap 1/4	14s
623	COMP							FeAr Clear	60s
624	BIAS(4)								
625	Comp for HD177724							FeAr Clear	60s
626	HD177724	19 00 49	+13 42	02 43 27					702s
627	"			02 56 19					414s
628	COMP							FeAr Clear	60s
629 630 631	FLATS ×3							Tung A=1/4	14s
632	BIAS(4)								

Spectr. Temp. ..... Dome Temp./Hum. +7.7°C 53% Transparency Conditions . Haze & cloud, small clear holes 1644

Focus ... 6:80 .....

Spectr. Temp. ..... Dome Temp./Hum. ..... continued the same

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	~~Emulsion~~	P.H.	Program	Remarks	Quality
							6563A	1c;			
								22			
								23		11.75k ADU max	
205								23c;		CCDT = -101.1°C	
203								23c;			
200	2-4"									in & out of Cumulus cloud	
160								23c]			
								24c;			
								25c]			
								1c0		Dome T +7.5°C	
								26			
25000								27c;	Telluric Std	1.321 Lots of cloud Air mass	
11										CCDT = -100.3°C	

165 pg. #4

Date 1993 Apr 28/29 Observers Hdy/Tn

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc 13633	Comp							FeAr Clear	60s
34	FLAT							TUNG Ap 1/4	14s
35	HD 150484 edv	16 36 12	+00 41	03 16 09					650
36	" edv			03 27 20					650
37	"			03 38 30					650
38	"			03 49 57					650
39	"			04 01 14					713
40	FLAT							TUNG Ap 1/4	14
41	Comp							FeAr Clear	60s
42	BIAS (4)								
43	HD 150484			04 17 10					535
44	Comp							FeAr Clear	60s
	Nonwritten Focus & Line ID exps. Apr 29/30 Tn							FeNe Ap 1/8	5s
	Wavelength RANGE ~~5915~~ → 7130Å Red hand To Identify Blue end.								

Otc Identifications

Spectr. Temp. ..... Dome Temp./Hum. +7.5°C 55-3% Transparency Conditions ... V. Hazy ... 166

Focus ... 6.80 ... some cloud

Spectr. Temp. ..... Dome Temp./Hum. +7.3°C 57%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	~~Emulsion~~	P.H.	Program	Remarks	Quality
							6563Å				
								6ci		122 K ADU max	
335								7ci	Hdy pgm		
276											
235								7ci			
180								8ci		< 30/1 S/N estimated	
210	3" but very hazy							8ci			
								9		13.0 MAX ADU	
								10			
								1ci			
290	2.3"							11ci		Clear again SOAT OF	
								14ci			
+11.1°C			Set 7.00		150 l/mm G 2415		* 6525Å		Max → 60000 ADU	Center @ Row # Pixel 7512	

Focus Right on at this setting [Wheel angle = 23.6°]

At least a +.2 set off set from 1800 l/mm focus for same Temp.

CCD FORMAT ORIGIN should be ≈ 520 vs 480 for 1800 l/m

pg.1 167

Date Apr.30/May.1-93 Observers Hdy./Fbr

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc13645-6	Focus Test.								
47	Bias (4)								
48	Dark (1200s)								
49	Bias (4)								
50	Bias (4)								
51	Comp							Fe/Ne	60s
52	HD87901	10 03 03	12 27 22	21 27 26					72s
53	HD87901	"	"	21 30 04					94s
54	Comp							Fe/Ne	60s
55-57	Flat x 3							Tung n=1/2	8s
58	Bias (4)								
59	Comp								60s
60	Flat								8s
61	HD150484	16 36 12	+00 41	21 50 40					650
62	"			22 01 50					

Spectr. Temp. ..... Dome Temp./Hum. 14.2°C / 64.8% Transparency Conditions ... Overcast. → Hy cloudy

Focus ..... 6.71 .....

Spectr. Temp. ..... Dome Temp./Hum. ..... Normalize on HR4496

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	1800 G = 6025	250 μ Fix	λ-E563				
								Yes		Lights ON	
45 K									Telluric	Training	
65 K									Telluric	Training	
366		V = 8.34-8.94	G2V						Hdy	Thin cloud.	
403											

pg 2 169

Date Apr 30/May 1-93 Observers Hldy/Fbr

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
63	HD150484			22 13 00					
64	"			22 24 10					
65	"			22 35 20					
66	BIAS(4)								
67	COMP							FeAr Clear	60s
68	FLAT							Tung A=1/2	8s
13669	HD 150484			22 51 22					650s
70	"			23 02 32					650s
71	"			23 13 42					650s
72	"			23 24 53.					650s
73	"			23 36 02					
74	FLAT							Tung A=1/2	8s
75	COMP							FeAr Clear	60s
76	BIAS(4)								
77	HD 150484								650s
78	"			00 02 31					

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .... Clear - High cloud 170

Focus ..... 6.7.1 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
427										T = 11.5°C / H = 71.6%	
462											
										T = 11.0°C / H = 72.6% (2248)	
516											
554										T = 10.3°C / H = 75.1% (2321)	
492											
440			(SEEING VERY BAD NOW)							THIN CLOUD.	
516											
617											
590											

pg 3 171

Date Apr 30/May 1 '93 Observers Hdy/Fbr

Emulsion Batches: .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
13679	HD150484			00 1341					650s
80	COMP								
81	FLAT								
82	BIAS(4)								
83	DARK			01 0718					1200s
84	BIAS(4)								

Spectr. Temp. ..... Dome Temp./Hum. +9.3°C / 79.9% Transparency Conditions 172

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
342				< TWO EXPS. DOME CLOSED						CLOSED SHUTTERS IN MID-EXPOSURE	

All to P&W

173 #1 SAT/SUN after TOURS Tn

Date MAY 1/2-93 Observers ... Hdy./Fdr

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
13685-6	Focus								
87	Bias (4)								
88	Comp							FeAr	60s
89	HD87901	10 03 03	12 27 22	22 47 34					120s
90	"			22 50 47					123s
91	Comp							FeAr	60s
92-94	Flat x 3							TUNG R=12	10s
95	Bias (4)								
96	Comp							FeAr	60s
97	Flat							TUNG R=12	10s
98	HD150484	16 36 12 ~~00 41 00~~	00 41	23 12 39					650s
99	"			23 23 49					
13700	"			23 34 59					
701	"			23 46 09					
702	"			23 57 19					

Spectr. Temp. ..... Dome Temp./Hum. ...9.5/63.8% (2250) Transparency Conditions ..Very Hazy..... 174

Focus .....6.80.....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
							5880Å				
45K									Telluric	11K MAX	
45K									"		
~~45K~~	4"										
										11 K	
215		V E 8:34- 8:54	G2V								
255											
315											
420											
400											

H2 175

Emulsion Batches: .....

Date May 1/2-9.3 ..... Observers .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
703	Bias (4)								
704	Comp							Filter Cen	60s
705	Flat							TUNG Y2	10s
706	H0150484			001201					650
7	"			002312					650
8	"			003422					650
9	"			004532					650
10	"			005642					650
11	Bias (4)								
12	Comp							Filter	60
13	Flat							TUNG A-Y2	10s
14	H0150484			011419					
15	"			01 25 29					
16	"			013639					
17	"			014750					
18	"			015900					

Spectr. Temp. ..... Dome Temp./Hum. 9.1/64.2 Transparency Conditions ..... Haze 176

Focus 6.80 (0010)

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
										13K max.	
305										Increasing Haze	
298											
360											
315											
315											
										Thin Cloud.	
										Reset Spec. Controller.	
455											
515 (wow!)											
612											
1275 → Sum of 2											

#3 177

Date May 1/2-93 Observers .....

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
719	BIAS(4)								
720	COMP							Rear Cen	60s
721	FLAT							TUNG Y2	8s
22	HD150484			02 14 36					650
23	"			02 25 46					650
24	"			02 36 56					650
25	"			02 48 07					650
26	"			02 59 17					650
27	COMP							REAR	260s
28	FLAT							TUNG A=1/2	8s
29	BIAS(4))								
30	HD150484			03 15 00					650s
31	"			03 26 10					"
32	"			03 37 20					"
33	"			03 48 31					"
34	"			03 59 41					"

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .... Haze 178

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
							5880 Å				
700											
744 (omigod!)											
} 1599											
803											
~~ALL~~											
761											
791											
681											
677											
581											

#4 179

Date May 1/2, 1993 Observers Hdy/Fbr

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
13735	FLAT							A=1/2	8s
6	COMP							FeAr Clear	60s
7	BIAS(4)								
8	COMP								
9	HD177724								120s
40	HD177724								180
41-43	FLAT x3								
44	BIAS(4)								
41	COMP								
42-44	FLAT x3								
45	BIAS(4)								

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions 180

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
30000											
34K											

All to Perseus + Work

11.8K Max

pg. #1 181

Date May 2/3-93 Observers Hdy./For

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc13746	Bias (4)								
47-48	Focus Test								
49	Comp								
50	HD87901	10 03 03	12 27 22	200703					90s
51	"			200907					
52	Comp							FWJr	60
53-55	Flat x3							TUNI A=1.2	8s
56	Bias (4)								
57	Bias (4)								
58	Comp								60s
59	Flat								12s
60	HD156848			220028					650s
61	"			221138					650
62	"			222249					650
63	"			223359					650s
64	"			224509					650s

DELAY

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions ..Ptly. cloudy.....182

Focus ....6.80.....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
					1800 G=5530	250 μ	λ=5580				
50K									Tellurium		
60K									"		
293								6ci			
680											
359											
351											

pg.#2 183

Date MAY 2/3, 1993 Observers Hdy/Fbr

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
13765	BIAS(4)								
66	FLAT							Tung A=1/2	12s
67	COMP							~~Fe Ar~~ Clear	60s
68	HD 150848			23 01 07					650s
69	"			23 12 17					650s
70	"			23 23 28					"
71	"			23 34 54					"
72	"			23 46 04					"
73	BIAS(4)								
74	COMP								60s
75	FLAT							A=1/2	12s
76	HD 150848			00 01 58					650s
77	"			00 13 09					"
78	"			00 24 19					"
79	"			00 35 29					"
80	"			00 46 39					"

Spectr. Temp. ..... Dome Temp./Hum. +11.1°C/57.5% Transparency Conditions ... HI THIN CLOUD ... 184

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
362	IS REALLY COMPLETELY FUCKED										
352											
290	IS EVEN MORE FUCKED UP										
278											
280											
380										H = 60.1% SEEING O.K.	
424											
[illegible]											
390											
350											
350											

185

#3

Date ..May 2/3-93..... Observers .....

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
81	BIAS(4)								
82	COMP							P&R	60
83	FLAT							TUNG Y2	12s
84	HD150848				010349				650
85	"				011459				"
86	"				012609			---	"
87	"				013719				"
88	"				014830				"
89	BIAS(4)								
90	COMP								60s
91	FLAT							A=1/2	10s
92	HD150848			02 04 38					650s
93	"			02 15 48					
94	"			02 26 59					
95	"			02 38 09					
96	"			02 49 19					650s

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
										RACK FAILURE (#2)	
										15K MAX (000 ps!)	
370											
340											
335											
345											
329											
										13475 ADU	
330											
320											
363	PRETTY DARK GOOD										
319											
349											

#4 187

Date ..... Observers .....

Emulsion Batches:
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.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
97	BIAS(4)								
98	~~FLAT~~								10s
99	COMP								
13800	HD 150848			03 04 08					650
1	"			03 15 18					"
2	"			03 26 28					"
33	~~BIAS(4)~~			03 38 23					
44	~~COMP~~ "			03 49 33					
13805	FLAT BIAS(4)								
6	COMP								
7	FLAT							A=1/2	9s
8	COMP								
9	HD 177724								307s
10	BIAS								

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions ..... IBB

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
319											
171										CLAUDE	
234											
442 ?											
121											
1800											

Pg #1 189
Thurs / Fri

Date 1993 MAY. 6/7..... Observers [BARTEL] ..... Tn. / Fbs...

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC13811 12	Comp/Stellar HARTMAN Pair				1947	0 20W	+30°	FeNe A=1/8	5/8
13	Comp							FeNe A=1/8	5
14	HD87901	100303	+12 2722	20 01 48					16sec
15	BIAS(4)								
16	Comp ~~Lgb~~ ~~2nd~~ HD87901 ~~4th~~							FeNe A=1/8	3 sec
17	Comp							"	5s
18	HD 84937	09 4330	+14 16	20 0806					1140
19	Comp							FeNe A=1/8	5s
20	Comp								5s
21	SN 1993J	1950 09 5119	+691527	20 4020		0206W			2270
22	Comp							FeNe A=1/8	5
23	SN 1993J			21 2158		0248W			2340
24	Comp							FeNe AF V8	5se
25	BIAS(4)								
26 – 30	FLATS x 5					03 00W	+70°	TUNG Ap=1/8	12sec

Spectr. Temp. ..... Dome Temp./Hum. 15.9°C ... 49% Transparency Conditions . O.K. ... ~~Some~~ thin cirrus ..

Focus .. 6.95 .. for 150 l/mm grating

Spectr. Temp. ..... Dome Temp./Hum. 13.8°C ... 52% CLAMBDA 90 CGAIN

Exp. Mtr.	Seeing	Tel. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	~~Emulsion~~	P.H.	Program	Remarks	Quality
				CASS CCD	150 l/mm G 2415	250u deckar	6525A	3c; 4c;			
								5c;		OG560 ORDER SEP FILTER	
2000		1.36	B7V					6c;	Telluric Std	fast guided in stellar beam	
								1c;			
								7c;		No Filter for Comp beam.	
								8c;			
1000	<2"	8	F0					9c;	Std for SIN 1993J	MAX 12K ADU	
								10c;			
								11c;			
137	<2"	>11		≥ 10K photons ΣAVG of 5 cols				12c;		Tel East Side of Piers	
								13c;		1.154 AIR MASS AT END	
123								14c;		~~EB~~	
								15c;			
								1c;			
								16; 17c;		12K ADU MAX	

191

P#2 Thurs Fri

Date 1993 MAY 6/7 Observers [Bln] Tn / Flat

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
ABCD EF FM00489	STRUVE 1760	13 29.7	+26 47		2227	2 0020E			"N" mode
CC13831 32	Focus Comp / Stellar HARTMAN							FeNe Ap-1/8	5/8
33 34	Focus Comp / Stellar "					0005E	+35 37	FeAr Clear	60/80
35	Comp							FeAr Clear	80sec
36	HD 93521	10 42 42	+38 06	23 16 59					2603
37	Comp								
38	BIAS (4)								
ABCD FM00490	Sigma 1919	15 08.3	+19 39			~00		"N" mode	
CC13839	Comp							FeAr Clear	80s
840	HD 93521	10 42 42	+38 06	00 46 02		0533W			3127
841	Comp								
842	BIAS (4)								
843 848	FLATS x6					0430W	+37 36	Tung Ap 1/2	8sec
849	Comp							FeAr Clear	80s
850	HD 177724	19 00 49	+13 42	00 55 56					203

Spectr. Temp. ..... Dome Temp./Hum. +13.1°C ... 56% H Transparency Conditions ... FINE .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ..... ℄ LAMBDA FANS on since 19EST

Exp. Mtr. INT	Seeing	Rlc. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	~~Emulsion~~	P.H.	Program	Remarks	Quality
4×67ms 2×133ms	2.2"	8.8			Above →	250u decker out			Seeing Test and calibratn	no wind DBL STAR Dome SSW FOR Scale	
	Set 6.98			(150h at 23.5° angle)	150l/mm G2415	250u no decker	6525Å	18c; 19c;		Topup done by 23EST	
T=+13°C Set 6.78					1800l/mm G6055 no	250u decker	6600Å	~~20c;~~ 18c; 19c;			
								20c;			
14,600	3"	V 7.04	09.5 V					~~21c;~~	Bln pgm	≈ 60K photons Σ FOR 10cols 2 30/1 S/N aug above background	
								22c;			
~~95×95 pixels~~ ~~103×103~~ pixels	7.3"	6.8 7.7		95×95 pixels for 4×67ms Ints 103×103 pixels for 2×133ms Ints				1c;		Dome T = +12.3°C	
									Seeing and Scale calibratn	Dome SW, no wind	
								23c;			
15,500	3.5"	V 7.04	09.5 V					~~24c;~~	Bln pgm		
										Dome T +11.5°C	
								24c;		MAX ≈ 13k ADU	
37000								25c;	Telluric Std	AIR MASS 1.372	

pg#3 193

Emulsion Batches:

Date 1993 MAY 6/7 Observers [Bln] Fbr. / Tn.

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc13851	HD177724	19 00 49	+13 42	020209					186
852	Comp							FeAr Clear	80s
853	Comp							"	80s
854	HD112028	12 48 23	+83 57	021822					580
855	Comp							FeAr Clear	80s
856	BIAS (4)								
857 859	FLATS x 3							Tung Ap 1/2	7sec
860	Comp						accident Ap=1/2 →	FeAr Clear	80sec
861	Nova Cyg 92	20 27 43	+52 17 39	025733					1687
862	Comp							FeAr Clear	80sec
863	Comp							FeAr Clear	80sec
864	HD112028	12 48 23	+83 57	033946					1970
865	Comp							FeAr Clear	80sec
866 - 868	FLAT x 3							TUNG Clear	35s
869	BIAS (4)								

Spectr. Temp. ..... Dome Temp./Hum. +11.4°C ..... 51.5% H Transparency Conditions . FINE 194

Focus ..... 6.78 ..... Clouding in at end

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	~~Eq.~~ Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
40K		2.99	AOV$_a$	CASS CCD	1800 l/mm G=6055	250$_u$	6600Å	25c;	Telluric	Repeat to get more centered	
								~~26c;~~			
								~~26c;~~			
13K		V 5.32	A2					27c;	Blk pgm	AIR MASS = 1.378 South & brighter of pair	
								26c;			
								1c;		Dome T = 11.1°C	
								28c;			
								29c;		Encoder offsets out Δ RA = 00 00 10 That's ok	
220	3"							30c;	Nova pgm	Δ Dec −00015(That's ok	
							6600Å	31c;			
					1800 l/mm G=1565	250$_u$	4475Å$_o$	32c$_o$	~~Blk pgm~~	CCDT = −10.7°C	
38K	4"	5.32	A2					32c;	Blk pgm		
										12.5K MAXIMUM.	
										All to Perseus & WORM.	

195

pg #1 Fri Sat

Date 1993 MAY 7/8 .... Observers Hdg./J.T.n.....

Emulsion Batches:

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CBS 386 (for Headers) 7 sec ahead of WWV Time

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC13870 871	Comp/Stellar HARTMAN Test (during topup)			19 52					
872	BIAS(4)								
73	Comp							FeAr Clear	60s
74	HD87901	10 03 03	+12 27 22.	20 08 21					104
75	"	"	"	20 11 29					59
76	BIAS(4)								
77	Comp							FeAr Clear	60s
78 80	FLATS x 3							TUNG Ap=1/2	8 sec
81	FLAT at HD197433 posn							"	11 sec
82	Comp, then another BIAS(4) CC13883							FeAr Clear	60 sec
84	HD 197433	20 38 36	+75 14	20 31 37					400
85	"			38 42					400
Header Data Edit 86	"			45 56					400
87	"			52 54					"
88	"			59 53					"
89	"			21 06 52					"

Spectr. Temp. ..... Dome Temp./Hum. +12.1°C 53.8% Transparency Conditions .. FINE 196

Focus .. 6.78 ..... CCDT → -100°C Topup by 20EST

Spectr. Temp. ..... Dome Temp./Hum. +11.4°C 55.3% CLAMSHELL HR 4112 Tel Normalizatn star

Exp. Mtr.	Seeing	Eff. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	~~Emulsion~~	P.H.	Program	Remarks	Quality
				CASS CCD	1800 l/mm G=5530	250μ decker	5880Å			Right on at Row #370	
								1ci			
								5ci			
44K		1.36	B7V					~~6ci~~	Telluric Std		
49								6ci	" "		
								~~7~~ci			
								7ci			
								~~8ci~~		132K A04 MAX	
								8ci		6.2	
								9ci		Dome T = +11.7°C	
1580	2.3"	7.23 - 7.68	G5V +K7V					10ci	Hdygpgm	AIRMASS 1.871	
~~1580~~								11ci			
1700	2"							18ci		STAR400s.BAT x 7	
1780											
1790											
1820											

Pg#2 197

Emulsion Batches: .....

Date 1993 MAY 7/8 Observers ... Hdy in 24" dome / TH .....

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC13890	HD197433	20 38 36	+75 14	21 13 51		08 30 E			400s
91				20 50					"
92				27 50					"
93	BIAS (4)								
94	Comp							Fear Clear	60s
95	FLAT							Tung Ap=1/2	11s
96	HD197433			21 38 49					400
97				45 59					"
98				52:58					"
99				59:57					"
CC13900				22:06:56					"
01				22:13:55					"
02				22:20:53					"
03				22 27 56					
04				22 34 54					
05	BIAS (4)								

Spectr. Temp. ..... Dome Temp./Hum. +11.3°C 55.4%H Transparency Conditions ... FINE 198

Focus ... 6.78 .....

Spectr. Temp. ..... Dome Temp./Hum. +9.7°C 60.8%H

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	~~Emulsion~~	P.H.	Program	Remarks	Quality
1840	2"			CASS CCD	1800 l/mm G 5530	250μ dark key	5880Å		Hdy pgm		
1840											
1920								18ci			
								19ci			
								20ci			
1650	3"							21ci	Hdy pgm		
1700											
1700											
1500											
1500											
1500											
1630								~~21ci~~			
1500											
1350	3"-4"							21ci			
								1ci			

pg#3 199

Emulsion Batches: .....

Date 1993.MAY.7/8..... Observers .Hdy./.Tn../.mki.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC13906	FLAT						Ap 1/2	Tung	60s
CC 907	Comp						Clear	FeAr	11s
908	HD197433	20 38 36	+75 14	22 45 21					400s
909				52 20					"
910				59 19					"
911				23 06 18					"
912				13 17					"
913				20 16					"
914				27 15					"
915				34 14					"
916				41 14					"
917	Comp				THERE IS A		Clear	FeAr	60s
918	FLAT			CC13928	NO, V MISTAKE		Ap 1/2	Tung	11s
~~919~~	BIAS(4) - written after next Batch				NO BIAS DONE				
919	HD197433	20 38 36	+75 15	52:15.					
20				59:14.					
21				00:06:12					
922				07:13:11					

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions ... v s/ hazy ... in SW 200

Focus ... 6.78 .....

Spectr. Temp. ..... Dome Temp./Hum. ..... C LAMBDA

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	~~Emulsion~~	P.H.	Program	Remarks	Quality
"						250	5880B	22c8 23c5		13.3 K ADUMAX	
1580	3"							24c;	Hdy gym.	Repeat x 9	
1530											
1720											
1870											
1900											
1860											
1790											
1760	3.5"										
1568								24c;			
								23, 22;			
1540								25c;			
1460.											
1425											
1340											

201

Pg #4

Emulsion Batches: .....

Date 1993 MAY 7/8 Observers Hdg. MKi. J.T.n.

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc13923	HD197433			00:20:10					40s
924				00:27:09					
925				00 34 08					
926				00 41 07					
927	THIS BIAS IS OK ↓			00 48 06					
929	BIAS(4) note cc13928 is Bias(4) Before previous Batch, NO, cc13928 IS SAME AS								cc1390
930	FLAT						Ap = 1/2	TUNG	9s
931	Comp						Clear	FeAr	60s
932	HD197433			01 00 09					40s
933				07 08					"
34				14 07					"
35				21 07					"
36				28 09					"
37				35 08					"
38				42 07					"
39				49 06					"

Spectr. Temp. ..... Dome Temp./Hum. + 8.7° 62% Transparency Conditions ... some thin cloud 20?

Focus ... 6.78 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	~~Emulsion~~	P.H.	Program	Remarks	Quality
1350							5880A		Hdy pgm		
1320	5"										
1290											
1430											
1440								25c;			
								22c;		11.5 K ADU max	
								23c;			
1620								26c;			
1630											
1640	4"										
1440											
1390											
1360	4"5"										
1350											
1300											

Pg #5 203

Emulsion Batches:

Date 1993 MAY 7/8 Observers Hdg./J.a.

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC13940	HD 197433	20 38 6	+75 14	01 56 05					
41 42 43	BIAS comp FLAT						Clear Ap 1/2	FeAr TUNG	60s 11s
44	HD197433			02 07 50					400s
45				14 49					"
46				21 49					"
47				28 48					"
48				35 47					"
49				42 57					"
50				49 56					"
51				56 55		02 46 E			"
52				03 03 55					"
53 54 55	BIAS FLAT comp						Ap=1/2 Clear	TUNG FeAr	10 60s
56	HD197433			03 14 39					400
57				21 38					"
58				28 37					"
59				35 36					"

Spectr. Temp. ..... Dome Temp./Hum. +8.8° 63% H Transparency Conditions P.C.A.T. cloudy 204

Focus ..... 6:78 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
1160							5880Å	26i			
									FLAT	MAX K ADU	
1350	3"							27ci	Hdy pgm		
1380											
1275											
1200										thin cloud	
1350										clearing again	
1620	3"										
1790											
1900										1.245 AIR MASS	
1900								27cs			
								28	FLAT	11.7 K ADU MAX	
								29			
1980	3"							32ci			
2100											
8140											
2160								32a			

Pg#6 205

Emulsion Batches:

Date 1993 Mar 7/8 Observers Hdg. / J.T.n

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC13960	HD197433	20 38 36	+75 17	03 4246					40s
61				4945					"
62				5644					"
63	BIAS Comp FLAT						clear	FeAr	60s
64							Ap 1/2	JUNG	10s
65									
66	Comp						clear	FeAr	60s
67	HD177724	19 00 49	+13 42	04 1423					
68	"			1731					
69	~~BIAS~~ Comp						clear.	FeAr	60s
70	FLATS x3						Ap 1/2	JUNG	9s
72									
73	BIAS(4)								
	ABCDEF								
Fm00491	HD176844	18 57 03	+40 32 36	~0435				"N" mode	

Spectr. Temp. ..... Dome Temp./Hum. +8.2°C 64.7%H Transparency Conditions Sl. hazy 206

Focus 6.78

Spectr. Temp. ..... Dome Temp./Hum. +7.8°C 66%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	~~Emulsion~~	P.H.	Program	Remarks	Quality
2150	3"					250μ decker	5880Å		Hdy pgm		
2100											
2100								32c;			
								33 ~~34~~			
								3c;			
34K								4c;	Telluric	MAX 10K ADU	
34K								4c;	Std.		
								5c;			
								6c;		MAX 13~~5~~K ADU	
								1c;			
									CCDT = -100.5°C steady		
39×39 pixels		V 6.65	M2 III	Int 4×67msec 2×133ms	Above	250μ Slit decker out			Seeing test	Dome W, no wind	

Pg#: 207

SAT / SUN

Date 1.99.3. MH.Y. 8/9.. Observers ..Hdg. ITn.....

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
Cc13974	BIAS								
75	Comp						Clear	FeAr	60s
76	HD87901	10 0303	+12 2722	23 2427					75
77	"			2641		04 10W			
78	Comp						Clear	FeAr	60s
79 → 81	FLATS x3						Ap = 1/2	TUNG	9s
82	BIAS(4)								
83	BIAS(4)								
84	FLAT						Ap=1/2	TUNG	8s
85	Comp						Clear	FeAr	60s
86	HD197433	20 3836	+75 14	23 5334					400s
87				00 0041					"
88				0848		05 32E			"
89				1545					"
90				2244					"
91				2943					"

Spectr. Temp. ..... Dome Temp./Hum. +13.3°C 62% H Transparency Conditions ..Part. Cloudy ..... 20B.

Focus ....6.78.....

Spectr. Temp. ..... Dome Temp./Hum. .....

Jupiter looked at for Reg Set tours. Good seeing. FANS on After Tours

CLAMBDA

Exp. Mtr.	Seeing	Rpt. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	1800 l/mm G=6625	2Pix darker	6563Å			CCDT -> -100°C	
								3ci			
32K		1.35	B7V						Telluric Std		
								4ci	"		
								5ci			
								6ci		MAX 13.2 K ADU	
									Grating disabled before Sp Cont Reset		
								1ci		Dome T = +12.7°C	
								6ci		13.3 K ADU	
								7ci			
2250	2"	7.23 -7.68	G5V -K7V					8ci	Hdy pgm	18K photons For 5 cols ΣAvg above blgnd	30/1 s/N
2340								9ci			
2400										Air mass 1.450	
2300											
2600											
2450								9ci			

209
pg 42

Date 1993 MAY 8/9 Observers H.d.y. I.I.n → mainly at 24"/19" (Photometry of same star)

Emulsion Batches: .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc13992	HD197433	20 38 36	+75 14	00 37 00					40s
93				43 59					4
94				50 58					4
95 96 97	BIAS COMP FLAT						Clear Ap = 1/2	FeAr TuNG	60s 8s
98	HD197433			01 03 26					40s
99				10 25					4
cc14000				17 24					4
01				24 22					4
02				31 21					4
03				38 29					40
04				45 55					40
05				52 54					11
06				59 53					11
07 08 09	BIAS FLAT COMP							TuNG/FeAr A=1/2/Clear	8s/60s
14010	HD 197433			02 10 49					40s
11	11			02 17 48					11

Spectr. Temp. ..... Dome Temp./Hum. ~~112°~~ 63.8% Transparency Conditions . Fine → ~~s~~/hazy ... 210

Focus ... 6.78 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
2500							6563Å				
2300	1-2"										
2320								9ci		22K photons ≥ Avg above background.	
								10i 16	FLAT MAX 14.2 K ADU		
1690	2"							17ci			
2100											
2200											
2190											
2190								17ci			
2320											
2048											
2215											
2300											
								18/19			
2570	1-2"							20ci			
2650											

Pg#3 211

Emulsion Batches: .....

Date 1993 MAY. 8/9.... Observers .Hdy./Tn..... .....

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC14012	HD197433	203836	+7514	022447					400s
13				3146					"
14				3845		0302E			"
15				4544					"
16				5243					"
17				5942					"
18				030641					"
19 20 21	BIHS comp FLAT						Clear Ap 1/2	FLAT TUNG	60sec 8sec
CC14022	HD197433			031805					399
23	"			2537					400
24				3234					"
25				3933					"
26				4632					"
27				5336					"
28	BIHS(4)								

Spectr. Temp. ..... Dome Temp./Hum. +12.8°C ... 56.3% Transparency Conditions ... Fine .....

Focus ... 6078 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	~~Emulsion~~	P.H.	Program	Remarks	Quality
2530							6563A		Hdg pgm		
2420	2"-4"										
2360	2"-3"										
2400											
2100											
2400	1"-2"										
2300	2"-3"							20c;			
								1c; 21c; 22c;	FLHT MAX	READY	
2200	2"-4"							23c;			
1940								24c;		Repeat x 4	
2050	2"-4"										
2170											
2000								24c;			
1980								24c;			
								1c;			

213 pg#4

Date 1993 MAY 8/9 Observers Hdeg TTG

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc14029	FLAT					Ap 1/2	TUNG	8s	~~60~~
30	Comp					clear	FeAr	60s	"
31	Comp					"	"	"	
32	HD177724	19 08 49	+13 42	041037					120
33	"	"	"	1532					126
34	Comp					Clear	FeAr	60s	
35 → 37	FLATS x3					~~FLATS~~	Ap 1/2	TUNG	8sec
38	BIAS(4)								
		'F' maybe	too strong						
FM00492	ABCD E ~~F~~ G HD178844	18 57 03	+40 32 36	0430		~0020W		"N" male	

Spectr. Temp. ..... Dome Temp./Hum. 112.3°C 55.3% Transparency Conditions ... Fine 214

Focus ... 6.78 .....

Spectr. Temp. ..... Dome Temp./Hum. 112° 56%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
							6563A	25c		13.0 K ADU max	
								26c			
								26			
30K		V 299						27	Telluric	11 K max	
33								27c	"	11 K max	
								26c			
								34c		MAX 14 K ADU	
								1c			
										CCDT -100.5°C	
39x39							Light N breeze		Seeing Test	Dome West	
							All to Persons & WORK				

215

Pg #1 Sun / mon

Hdy on 24/19" for Photometry of HD197433

Emulsion Batches: .....

Date 1993 MAY 9/10. Observers [BATES] / T.T. ..... Hdy / Tn .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC14039	BIAS(4)			19 58 51			OG 560 F; Hdy for 34		
40									
41	Comp / Stellar Hartman posns						Ap = 1/8	FeNe	5/8
42	Comp						"	"	5s
43	HD 87901	10 03 03	+12 27 00	20 14 12	~~20 14 57~~				15s
44	Comp						Ap = 1/8	FeNe	5s
45									
46	FLATS x 3						"	Tung	14
47	Comp		1950!				"	FeNe	5
48	SN 1993J	09 51 19	+69 15 27	20 30 56		01 44 20W			865
49	Comp							FeNe	5
50	BIAS(4)								
51									
52	BIAS(4)	Hdy / Tn now 1900	Then Comparison				Clear	FeAr	60s
53	HD 87901	10 03 03	+12 27 00	21 02 22					26s
54	"			21 04 31					31s
55	Comp						Clear	FeAr	60s
56									
→ 57	FLATS x 3						Ap = 1/2	TUNG	8sec
* 58	BIAS(4)								

Spectr. Temp. ..... Dome Temp./Hum. +18.8°C ... 33.8% Transparency Conditions .... FINE 216

Focus ... 6.93 for 150 lp/mm

Spectr. Temp. ... 6.70 for 1800 lp/mm Dome Temp./Hum. .....

CSS386 Time ≈ 10 secs ahead of WWV Time. Left that way for night. ie Header Time ERROR

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
Stellar Beam				CASS CCD	OG560		Order sep filter			for Stellar Beam with 150 lp/mm setup	
					150 lp/mm G=2415	250u slacker	6525HP	3/4	Focus test	2.4 pixel/Rad @ pixel 1#400	
								5c;			
2000								6c;	Telluric	Fast guided 14K max	
								7			
								8		11K max	
								9c;			
N/A ?	2.2"							10c;	SNova	Fine one	
								16c;			
					OG560 Removed here.						
					1800 G=5530		5880 Å	1c;		Dome T = +18.6°C	
								17c;	Telluric Std		
								18c;	" "		
								19c;			
								20c;		10.4K ADU max	
								1c;			

(Because it was all dark count (Why not?) indistinguishable from Reality)

217pg#2 Sun/Mon

Date 1993 MAY 9/10 Observers Holy/I.T.M

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC 14060 61	FLAT / Comp						Ap=1/2 Clear	Tung FeAr	1 sec 60 sec
62	HD197433*	20 38 36	+75 14	21 23 31	*Actually SAO 9825				211
63	HD197433 for Real			30 21					400s
64	"		START Time = 3807		clk time (3807 START found from CCDLOG exact)				"
65				45 29					"
66				52 28					"
67				59 27					"
68				22 06 59					"
69				13 57					"
70				20 56					"
71 72 73	BIAS(4) comp FLAT						Clear Ap 1/2	FeAr Tung	60 sec 11 sec
74	HD 197433			22:32:43					400
75	"			22:39:42					
76				22:46:41					
77				22 53:39					

Spectr. Temp. ..... Dome Temp./Hum. +18.5°C. 36%H Transparency Conditions ..... Fine 218

Focus ..... 6.70 ..... * Note exp meter dark outs ≈ 1 out in 2 secs (All night)

Spectr. Temp. ..... Dome Temp./Hum. ..... CLAMBDA

Exp. Mtr.	Seeing	Pg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	~~Emulsion~~	P.H.	Program	Remarks	Quality
					1800 l/mm G=5530	250µ	5880Å	20 21	FLAT	11·8 MAX	
* N/A	1·2"	~~7·3~~ ~~7·7~~	∈ U	faint				~~22~~	Wrong one	(STAR TO NW of intended ≈ 2 ARC mins)	
2285		7.3 7.7						22c;	Hdy pgm		
2330								23c;	→ Read out in 22c;	; START Time of ERR	
2600	1·2"							23c;			
2750								23c;			
2730								23c;			
2800								24c;			
2760								"			
2830								24c;			
								25c; 26c;		13·3 MAX FOR FLAT Dome T = +18.4°C	
3000								27c;			
2940.										fade-outs?	
2900.											
2900										Excellent Seeing.	

pg #3 219 sun/mon

Date . 1993 MAY 9 10 ... Observers Hdg / T.y. ... + MKi ... Thr

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC14078	MD 197433			23:00:38					
77				23:07:37					
80				23 14 36					
81				23 21:35					
082				23 28:34					
83 34 85	BIAS FLAT Comp						AD 1/2 Comp	JUNG FEAT	11s 60s
86	HD 197433	20 38 36	+75 14	23 43 55					400s
87				50 54					
88				57 53					
89				00 04 51					
90				11 50					
91				18 49					
92				25 48					
93				32 46					
94				39 46		4 57E			
~~95~~									

Spectr. Temp. ..... Dome Temp./Hum 18°C 38% H Transparency Conditions Fine 220

Focus 6:70

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
2480	<2"										
2800											
2610										Train during exposure.	
2740											
2680											
								1ci/12ci/1o			
2590								~~2ci/12~~ 28ci			
2550								11		Repeat x 9	
2360	2'3"										
2360											
2450											
2550											
2510											
2340											
2400								28ci		HR MASS 1:396	

pg #4 221

Emulsion Batches: .....

Date .1993 MAY 9/10... Observers .Hdg..JTn..... .....

31 .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC14095 96 97	BIAS(4) comp FLAT						Clear Ap 1/2	FeAr TUNG	60s 10s
98	HD197433			00 5107					400s
99				5806					"
14100				01 0505					"
01				01:12:04					"
02				01:19:03					"
03				01:25:02					"
04				01:33:00					"
05				01 3959					"
06				01 4658					"
07 08 09	BIAS(4) FLAT Comp						Ap 1/2 Clear	TUNG FeAr	10s 60s
CC14110	HD197433			01 5830					400s
11				02 0527					"
12				1226					"
13				1925					"
14				2624					"

Spectr. Temp. ..... Dome Temp./Hum. 7.7.4°C ... 40%H Transparency Conditions ... S/ hazy 222

Focus ... 6:70 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
					1800	250 decker	5880A	32 33			
2410								34.	Hdy pgon	(≈130/1 S/N)	
2620											
2700	1-2"										
2650										(Adjusted times) Different Superb Seeing. Exposure.	
2980										Excellent Seeing.	
3050										" "	
3045										Note high exp. meter dark count.	
3100										(1 cnt/sec DARK)	
3050	1"							34ci		35 cnts in 40 secs	
								17 18	12.5KMAX		
3150								19ci		160/1 S/N	
3200	1"										
3050											
3300											
2950											

Pg # 223

Emulsion Batches: .....

Date 1993 MAY 9/10... Observers .Hdy../..T.n..... .....

45

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC14115	HD197433			02 3323					400
16				4022					"
17				4720					"
18				5419					"
19 20 21	BIAS(4) COMP FLAT						Clear Ap=1/2	FeAr Tung	60s 10s
22	HD197433			03 0458					400s
23	"			1157		02 24E			"
24	"			1856					"
25	"			2555					"
26	"			3303					"
27	"			4001					"
28	"			4700					"
29	"			5410					
30	"			04 01 10					
31 32 33	BIAS(4) COMP FLAT		CC14134 is Last BIAS(4)				Clear Ap 1/2	FeAr Tung	60s 10s

Spectr. Temp. ..... Dome Temp./Hum. 17.6°C ... 42.5%H Transparency Conditions ... Fine ... sl hazy ... SW 224

Focus ... 6.70 .....

Spectr. Temp. ..... Dome Temp./Hum. 16°C ... 47.7%H

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
2930	1"-2"						5880A				
3090											
3200											
3090	1"							19c;			
								21 20		12c/KAO4 max for FLAT	
3200	1"							22c;		Repeat x 4	
3120											
3160	1"										
2740											
2420	<1"									Repeat x 3	
2310											
2320											
2300											
2300	2"									CCDT = -100.4°C	
	Sp Controler Failed after this set.							23 24	∴ End Telluric not possible.		

pg #1 225

Emulsion Batches:

Date 1993 MAY 10/11. Observers Hdg./T.h./F.Bs.....

CSS 386 ahead 11 secs. From WWV Time

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CCH135	~~Comp~~ BIAS(4)								
36 37	Comp/Stellar	HARTMAN	Posns	20 07		0 0	+40° Clear	FeAr	60/90
38	Comp after								
39	HD 87901			20 1727					32
40	"			1903					33
41	Comp						Clear	FeAr	60s
42 → 44	FLATS x 3						Ap = 1/2	TUNG	8s
45	BIAS(4)			202450					
46 47	FLAT / Comp						Ap 1/2 Clear	TUNG FeAr	8s 60s
48	HD197433	20 38 36	~~+75~~ 14	203451					
49	"			4147					619
50	"			5311					400
51	"			220010					400
52	"			0709					"
53	"			1409					"
54				2108					"

Spectr. Temp. ..... Dome Temp./Hum. ~~15.9°C~~ 22.3°C 49.3% Transparency Conditions . Sl. hazy 226

Focus .. 6.63 .....

Spectr. Temp. ..... Dome Temp./Hum. ..... CLAMBDA CCD -> -100°C

Exp. Mtr.	Seeing	~~Pix~~ Mag.	Sp.	Inst.	Grating/ Tilt	Slit	~~Emulsion~~	P.H.	Program	Remarks	Quality
				CASS CCD	1200 l/mm G=6025	250u dekta	6563Å	1c;			
Set 6.63		T= +22.2°C						3cc 4c;	Focus Test	Righton of Raw #335	
								5c;			
										~10 K max	
~35K		1.36	B7V					6c.		~10 K max	
35K								7		11.7 KADU max	
								8			
								1c;			
								9c; 5c.		10K mean for Flat	
1200		7.23 -7.68	G5V +K7V					11c.	Hdy pgm		
1800										STAR 400s, BAT x 7	
1390											
1450	2-3"										
1620											
1525											
1650											

227 pg#2

Emulsion Batches: .....

Date 1993 MAY 10/11 .... Observers Hdg / Tn / Fbr .....

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC14155	HD197433	20 38 36	+75 14	212807					
56	"			3506					
BIAS, Dark 57	BIAS								
Flat									
58/59	COMP/FLAT								60s/80s
CC14160	HD197433			214811					400s
61	"			215510					"
62	"			220210					"
63	"			0908					"
64	"			1608					"
65	"			2318					"
66	"			3017					"
67	"			3717					"
68	"			4416		0646E			"
69	BIAS						Clear filter		60s
70/71	COMP/FLAT						AP = 1/2	TUNG	8s.

Spectr. Temp. ..... Dome Temp./Hum. 21.5°C 40.5% Transparency Conditions ... FINE ... THR Haze

Focus ... 6-63 .....

Spectr. Temp. ..... Dome Temp./Hum. 20.5°C ... 45.6% H

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	~~Emulsion~~	P.H.	Program	Remarks	Quality
1520							6563Å		Hdy pgm		
1590											
1660								10ci			
1680											
1500	3"										
1700											
1585											
1560											
1560											
1500											
1730								10ci		1.577 Air mass	
								12 13		FLAT MAK 12.5 F ADC	

229 pg #3

Emulsion Batches:

Date 1993 MAY 10/11 Observers Hdg. L. Fbr. I. T.

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CCIA172	HD197433	20 38 36	+75 14	22 55 42					400s
73	"	"	"	23 02 41					"
74	"	"	"	09 40					"
75	"	"	"	16 39					"
76	"	"	"	~~30 08~~ 23 39					"
77	"	"	"	~~30 38~~					"
78	"	"	"	~~30 06~~ 37 37					"
79	"	"	"	~~44 36~~					"
80	"	"	"	51 35					"
81	BIAS (4)								
82/83	COMP / FLAT.							LEAR / V2	60/8
84	HD197433			00 03 16					400
85	"			10 15					"
86	"			17 14					"
87	"			24 13				-	"
88	"			31 12					"

Spectr. Temp. ..... Dome Temp./Hum. +20.3°C 46.2% Transparency Conditions ...O.K. ...a bit hazy... 230

Focus ...6.63.....

Spectr. Temp. ..... Dome Temp./Hum. +19.6°C 45.9% chamber

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	~~Emulsion~~	P.H.	Program	Remarks	Quality
1470	3-4"						6563A	15i	Hdg pgm		
1560											
1390											
1390											
1400											
1220											
1275										Better 74" Focus Need	
1593											
1330								15Ci			
1790								10Cs			
1875	3"										
1830											
1800	2"										
~~2070~~	<2"										

231 page #4

Date .93.May.10./11.... Observers .Hdy.in.24"/19"../.Tu../.Fbr

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc14189	HD197433			00 38 12		04 55E		"	40s
90	"		*	4722					4
91	"			5921					4
92	"			01 01 21					4
93 94 95	BIAS(4) FLAT comp						Ap 1/2 clear	TUNG FEAT	8s 60s
96	HD197433			01 13 02					40s
97				2009					4
98				2708					4
14199				3407					4
200				4106					4
01				4805					4
02				5504					4
03				02 0203					4
04				0902					4
05 06 07	BIAS(4) FLAT comp						Ap 1/2 clear	TUNG FEAT	8s 60s

Spectr. Temp. ..... Dome Temp./Hum 19.5°C 44.6% Transparency Conditions ... SLT. HAZY - GOOD 232

Focus ... 6.63 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Pg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	~~Emulsion~~	P.H.	Program	Remarks	Quality
	1"-2"	7.23 -7.68	G5K +K7V	CASS CCD		250u /pixel	6563Å		Hdg pgm		
2210										* Late Batch start due to not being in Right window	
2330	2"										
2370								10c;			
"								22 21		1,3-4 K ADU MAX Flat	
2380								23c;			
2635	1"-3"									Repeat x8	
2870											
2790											
2430											
2680	1"										
1700	1"										
0500	1-2"									26K photons above bkgnd.	
2590	1"							23c;	2x160/1 S/N	Sometimes looks like 2 sep stars aligned EW sep 1/2 slit width guided very closely, EW	
								24 25			

233 pg #5

Date MAY. 10/11 1993 Observers ..Hdy....Fbr..Th..... Emulsion Batches: ....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC 14208	HD197433	20 38 36	+75 14	02 20 15					400
09				27 17					"
10				34 15					"
11			(41 15)	41 15 ~~48 14~~.					"
12			(48 14)	48 14 ~~55 13~~					"
13			(55 13)	55 13 ~~03 02 11~~					"
14			(03 02 11)	03 02 11					"
15			(03 09 11)	09 11					"
16				03 16 10					"
17 18 19	BIAS(4) Comp FLAT						Clear Ap 1/2	Fe Ar Tung	60s 8s
20	HD197433			03 26 41					400s
21	"								"
22	"			03 40 37					"
23	"			47 36					"
24 25 26	BIAS Comp FLAT								60 8

Spectr. Temp. ..... Dome Temp./Hum. +19.7°C 41%H Transparency Conditions ..sl. hazy..... 234

Focus ..6:63.....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
	2"					250	6563A		Hdyppgm		
2190	1-2"									Repeat x8	
2165											
1560											
1845											
1665											
1730											
1730											
1870								26c;			
								27 28			
1770								27c,			
2755 → SUM OF "2"											
1610								29c;			
								31 32			

235 pg #6

Date 1993 MAY 10/11 ... Observers ..Hdy...Fbr...Iq.....

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
EC14227	Comp						Clear	FeAr	60s
28	HD177724	190049	+43 42	040438					125
29	"	"	"	040703					
30	Comp						Clear	FeAr	60
31 - 33	FLATS(3)						Ap 1/2	JUNG	7s
34	BIAS(4)								

Spectr. Temp. ..... Dome Temp./Hum. 49.4° 41.7% H Transparency Conditions 236

Focus ... 6.63 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
							6563A	33c;			
								34c;	Telluric Std		
								"			
								33c;			
								35c;		13 K mag	
								1c;			

pg#1 237

Date 1993 MAY 11/12 Observers Hdy/Flor

Emulsion Batches: .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc14235	Bias (4)								
236-7	Focus Tests.								
38	Comp							Fe Ar Cle	60s
39	Bias (4)								
40	HD87901	10 03 03	12 27 22						775
41	"			21 02 40					90s
42	Comp							Fe Ar Cle	60s
43-45	Flat x 3							Tung A=½	9s
46	Bias (4)								
47	Bias → HD 197433								
48	Comp							Fe Ar	60s
49	Flat							Tung ½	90s
50	HD197433	203842	7514	212610					400s
51	"			213331					
52	"			4031					
53	"			4729.					

Spectr. Temp. ..... Dome Temp./Hum. 17.9°C/43.2% Transparency Conditions light haze, clearing 238

Focus 6.70

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CCSS CCD	1800 G=5530	250 μ	λ_c=5480				
45K									Telluric	10.5K	
55K											
										RACK FAILURE (SEVERE)	
	3-4"								Hdy	Cloud.	
680									"		
626									"		
670									"		

#2 239

Emulsion Batches: .....

Date 93 May 11/12 Observers Hdy/Flor .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
54	HD197433			21 5428					400s
55	"			22 0127					
56	"			22 0826					
57	"			1525					
58	"			2224					
59	BIAS (4)								
60	COMP								
61	FLAT								
62	HD197433			223315					400s
63	"			4014					
64	"			4713					
65	"			5412					
66	"			23 0111					
67	"			0809					
68	"			1508					

Spectr. Temp. ..... Dome Temp./Hum. 17.1°/43.4% Transparency Conditions PARTLY CLOUDY UT 240

Focus 6.70

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
570				CASS CCD	1800 G=5530	250 μ	λc = 5880		Hdy.		
610											
700											
493											
660											
1050									Hdy	A LITTLE CLEARER	
1050											
1070											
877											
825											
730											
745											

#3 241

Date 93May.11/12 Observers Hdy/Fbr

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
69	HD197433			~~2322~~ 2207 ~~2355~~					
70	"			2906					
71	BIAS(4)								
72	COMP								
73	RUST								
74	HD197433			234024					400
75	"			4722					"
76	"			5421					"
77	"			000120					"
78	"			0818					"
79	"			1517					"
80	"			2216					"
81	"			2915					"
82	"			3614					"
83	BIAS(4)								

Spectr. Temp. ..... Dome Temp./Hum. 15.6°/47.2% Transparency Conditions Partly Cloudy 242

Focus 6.70 (2330)

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
720											
770											
912											
895											
1000											
920											
920											
970											
1020											
1030											
940											

#4 243

Emulsion Batches:

Date 93 May 11/12 Observers

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
84	Comp								60s
85	FLAT							2 DEG D=1/2	9s
86	HD197433			004751					400
87	"			5450					
88	"			010149					
89	"			0848					
90	"			1547					
91	"			2246					
92	"			2945					
93	"			3644					
94	"			4343					
95	BIAS(4)								
96	Comp								
97	FLAT								
98	HD197433			015455					400s

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions ..... Clear ? 244

Focus ..... 6.70 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
1010											
1030											
1070											
1175											
1140											
1122											
1220											
1200											
1185											
1585											

#5 245

Date 22 May 11/12 Observers Hdy / Fbr

Emulsion Batches:
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.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
99	"			020154					40s
14300	"			0853					
1	"			1552					
2	"			2251					
3	"			2950					
4	"			3649					
5	"			4348					
6	"			5047					
7	Bias								
8	Comp								60s
9	Flat								10s
10	HD197433			03 0319					
11	"			1018					
12	"			1717					
13	"			2416					
14	"			3115					

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions ..... CLEAR 246

Focus ..... 6.70 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
1570											
1475											
1438											
1270											
1020											
950										BSO guide (sorry).	
1332											
1320											
1245											
1225											
1300											
2900	SUM OF 2										

247

#6

Date 93 May 11/12 Observers Eddy / Fowler

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
143 15	HD 197433			3 8 14					900.
16	"			4 5 13					
17	"			5 2 12					
18	"			5 9 11					
19	Bias (4)								
20	Comp							Red or Yellow	60s
21	Flat								10s
22	Comp								
23	HD 177724			0 4 1 9 14					149
24	"			0 4 ~~22 18~~ 25 32					139
25	Comp								
26-28	Flat x3							Tong A = ½	8s
29	Bias (4)								

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions ....Clear..... 248.

Focus .....8.70.....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
1460											
1475											
1530											
30K									Telluric		
30K											
										386 Crash!	
					All to Perseus + WORM.						

#1 249

Date May 12/13-93 Observers Bth / Hdy / Fbr

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc143301	Focus Test							FeNe A=1/8	5s
332	Bias (4)								
333	Bias (4)							FeNe n=1/8	5s
	[illegible]	[illegible]	[illegible]						
334	Comp								
335	HD87701	10 03 03	12 23 22	195256					18s
336	Comp							Tung	14s
337-8	Flat x 2								
339	Bias (4)								
340	Comp							FeNe V8	5s
341	SN 1993J	(1950) 09 51 19	(1950) 69 15 27	204727					600
342	Comp								
343	Bias (4)								
344	Bias (Hdy pgm begins)								

Spectr. Temp. ..... Dome Temp./Hum. ...12.7°/46.9% Transparency Conditions .....SOME CLOUD..... 250

Focus .....6.90.....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	150 G=2415	250 μ	λc=6525			OG560 FILTER IN	
									TELLURIC		
3K											
										BACK FAILURES.	
										SN93J - PREV COORD NOT 1900	
0										BAD EXPOSURE - VERY FAINT	
				CASS CCD	1800 C=6024	250 μ	λ=6563				

251

Date May 12/13-93 Observers Hdy/Fbr

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
345	Comp							FeSr	60s
46	HD87901	100303	122722	21228					77
47	"			213032					89
48	Comp								
49-51	FLATx3							TUNG YZ	6s
52	BIAS (4)								
53	Comp							FeSr Cu	60s
54	FLAT							TUNG YZ	6s
55	HD197433	203842	+75 14	214924					400s
56	"			215623					
57	"			220322					
58	"			1021					
59	"			1720					
60	"			2419					
61	"			23118					

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions ..... CLEAR 252

Focus ..... 0.75 (1800 grating)

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD.	1800 $\alpha = .6024$	250 μ	$\lambda_c = 6563$				
451K									TELLURIC	AIRMASS = 1.4100	
56K									STD	8K MAX	
919									Hdy		
920											
979											
888											
935											
853											
865											

253
#3

Date May 12/13-93 Observers Hdy/Fbr

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
62	HD197433				3817				
63	"				4516				
64	Bias (4)								
65	Comp							Fe Ar Lam	60s
66	FLAT							Tung 1/2	8s
67	HD197433				225546				
68	"				230745				
69	"				230944				
70	"				1643				
71	"				2342				
72	"				3041				
73	"				3740				
74	"				4439				
75	"				5138				
76	Bias (4)								

Spectr. Temp. ..... Dome Temp./Hum. 7.5°/49.2% Transparency Conditions ..... Clear 254

Focus ..... 675 ..... (0000)

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
815											
869											
745											
860											
610	3"-4"									Thin Clouds	
890											
970											
1000											
1036											
1125											
1050											

255

#4

Date May 12/13-93.... Observers ....Hdy/Fbr.....

Emulsion Batches:
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.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC14377	Comp							F/5 Clear	60s
78	Flat							Tung 1/2	8s.
79	HD197433	203842	+75 14	000204	~~000201~~				400s
80	"			00:09:03					"
81	"			00:16:03					"
82	"			00:23:02					"
83	"			00:30:01					"
84	"			00:37:01					"
85	"			00:43:59					"
86	"			5058					"
87	"			5757					"
88	Bias								
89	Comp								
90	Flat								

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions ..... Good 256

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS – CCD	1200 G = 6024	250 μ	λ_c = 6563				
1190									Hdy.	MK: relief.	
1200											
1325										Seeing improved	
1260											
1275											
1265											
1220											
1165											
1220											

#5 257

Date May 12/13-97 Observers Hdy/Fox

Emulsion Batches: .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
91	HD197433			010847					
92	"			1546					
93	"			2245					
94	"			2944					
95	"			3644					
96	"			4343					
97	"			5042					
98	"			5741					
99	"			020440					
14400	BIAS								
1	COMP								
2	FLAT								
3	HD197433			021636					
4	"			2336					
5	"			3035					
6	"			3734					

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
910											
860											
815											
920											
810											
865											
895											
866											
921											
1000											
910											
935											
1160											

#6259

Date May.12/13-93 Observers Hdy/Fbr

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
7	HD197433			4433					
8	"			5132					
9	"			5832					
10	"			030531					
11	"			1230					
12	Bias (4)								
13	Comp								60s
14	Flat								8s
15	HD197433			032401					
16	"			3100					
17	"			3759					
18	"			~~3~~459					
19	Bias (4)								
20	Comp							Filter Clear	60s
21	Flat							Tung Y2	8s

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions ..... CLEAR 260

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
1035											
1165											
1165											
1270											
1325											
1320											
1300											
1340										SOME RACK PROBLEMS.	
1175											

H 7-261

Date May 17/13-93 Observers Hdy/For

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
22	BIAS								
23	COMP								
24	HD177724	190049	1342	040212					153
25	"			040511					148
26	COMP								
27-29	FLATx3								
CC14430	BIAS (a)								

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions ..... CLEAR 262

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
30K									TELLURIC	GUIDING ON.	
30K									"	—— " ——	
										AIRMAS = 1.55	

All to Perseus & Worm

263

#1

Date May 13/14-93 Observers Bt.L./F.Ds.

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CCI4431	BIAS (4)								
32-33	FOCUS TEST.								
34	COMP							FeNe/V8	5s
35	HD87901	10 03 03	12 27 22	205645					
36	COMP								
37-38	FLAT x 2								
39	[redacted] BIAS							FeNe V8	5s
40	[redacted] COMP	(1950) 095119	(1950) 691527	211252					900s
41	[redacted] SN1993J ↗							FeNe V8	5s
42	COMP								
43	SN1993J	(1950) 095119	(1950) 691527	213135					1800s
44	COMP								
45	SN1993J.	(1950) 095119	(1950) 691527	220412					3600
46	COMP								
47/48-50	BIAS/FLAT x 3								14s

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions ... PARTLY CLOUDY ... 264

Focus ..... 6.97 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
					150 $G = 24^{15}$	250 μ	$\lambda_c = 6525$			OG560 FILTER	
										CLOUDS. SKMAX	
0		PRETTY FAINT								PARTLY CLOUDY.	
										USING LONG INTEGRATION	
0		V>10								NICE SPECTRA!	
0											
										2 CONSECUTIVE	
										RACK FAILURES.	
										+ 386 CRASH.	

Pg#1 265 SAT/SUN

Date 1993 MAY 15/16... Observers [Rm] Flr. I.T.q..... Emulsion Batches:

2 LARGE SAT TOURS Looked at Jupiter ..... CCD 386 Time Right on 4AM Time

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc14451 52	Comp/Stellar hr ATMAN					2 43E	+33°	FeAr clear	40/70
53	BIAS(4)								
54	Comp			~~23 13 35~~				FeAr Clear	60sec
55	HD162714	17 47 17	-06 07 12	23 13 35					676
56	Comp							FeAr Clear	60s
57 59	FLATS x3	@ HD162714 posn,					Ap 1/2	TUNG	8s
60	Comp						clear	FeAr	60s
61	HD177724	19 00 99	+13 42 00	23 40 05					287
62	"	"	"	23 45 38					256
63	Comp						clear	FeAr	60
64	Comp						"	"	60
65	HD144579	16 01 29.7	+39 25 36	23 59 30					565
66	Comp						clear	FeAr	60s
67	BIAS(4)								
FM000493	ABCD EF HD144579	16 01 29.7	+39 25 36	00 18		0025 E	+39 11		

Spectr. Temp. ..... Dome Temp./Hum. +10.0°C 60%RH @ 2240 Transparency Conditions ... P.CLOUDY 266

Focus .. 6.78 .....

Spectr. Temp. ..... Dome Temp./Hum. ..... CLEAR DOME

90CG4IN No FANS tonight
480 0 50 1024 4 1 CCDEMT

Exp. Mtr.	Seeing	Pt. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
Set 6.78 T=10.0°C				CASS CCD	1800 l/mm G= 5910	0.5mm decker	6400Å	3ci 4ci		Temp dropping fast	
								1ci	* Very Gusty after 22EST		
								5ci		30-50 kn NW winds SAYS RADIO. weather	
3600	VVD BHD	6W5	G02b					6ci	Rm pgm	200/1 S/N	
								7ci			
								8ci		MAX 10.5k ADU	
								9ci			
32k	BHD BHD	2.99						10ci	Telluric Std	~~MAX 10K ADU~~ AIR MASS 2.027	
28k								11ci	" "		
								~~12ci~~			
								12ci	~~Std Vel~~		
3350	L10"	6.66	G8V					13ci	Std Vel		
								14ci			
								1ci		Cold Front going through	
55×55 pixels		6.66	G8V	4×67ms + 2× Integrations	133 lines/mm		Above @ 50µ slit (decker out)		seeing test	* very gusty NW Dome SW winds have died down to MODERATE NW	

pg #2 267

Date 1993 MAY 15/16 Observers [Rim] Fbr. /J.G.

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc1458	Comp						Clear	FeAr	60
69	HD203156	211523	37 49	00 3628		0515E			348
70	Comp						Clear	FeAr	60s
71	Comp						"	"	60s
72	HD198726	20 4713	+27 5230	00 5412					348
73	Comp						Clear	FeAr	60s
74	BIHS(4)								
75	Comp						Clear	FeAr	60
76	HD214975	22 3655	+56 1824	01 1325					1975
77	Comp						Clear	FeAr	60s
78	HD214975			01 4847		0507E			1805
79	Comp						Clear	FeAr	60s
80	comp								
81	HD194071	20 18 30	+27 55	02 2503					815
82	Comp						Clear	FeAr	60s
83	BIHS(4)								
84	FLATS	"	HD194071 posn				HD 1/2	FLAT	8sec
86									

Spectr. Temp. ..... Dome Temp./Hum. 7.7.9°C 57.5% Transparency Conditions Sl hazy 268

Focus 6.78

Spectr. Temp. ..... Dome Temp./Hum. 7.7.2°C 54.7%

Exp. Mtr.	Seeing	Pg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
						250					
					doctor	Back'n	6400A	15c;			
4600	5"	5.8 -5.9	F2					16c.	RM	AIRMASS 1.932 TOP PRIORITY STAR	
								17c;			
								18c;			
4500	7"	5.5	G0Ib					19;	Rm pgm	T Vel 1.800 AIRMASS	
								20c;			
								1c;		Dome T = +8.0°C	
								3c;			
1470	6"	8.4	G0Ib					4c;	Rm pgm	Z Lac (120/1 S/N)	
								5c;			
1250	5-9"	8.4	G0Ib					21c;	Rm pgm	1.25 AIRmass.	
								22c;			
1661	6"	8.3	G8III					23c;	Std vel		
								24c;			
								1c;			
								25c;		14.3K ADU MAX	

pg 43 269

Date 1993 MAY 15/16 Observers [Ros]...Th./.Fbs.....

Emulsion Batches:
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.....
.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC14487	Comp					~~accident~~	~~Ap 16~~	FeAr Clear	60s
88	HD173297	173920	-2045	025703 ~~024950~~		00 01W			1828
89	Comp						Clear	FeAr	60
90	Comp						"	"	"
91	HD 203156	21 15 23	+37 49	03 34 10					348
92	Comp						Clear	FeAr	60s
93	BIAS (4)								
94	Comp							FeAr	60s
95	Vesta (I hope) * HD	22 17 50 1993.45	+13 28 00	03 52 08		E	74° eyedge -13 18 45		413
96	Comp	↘ (Corrected in ~~Data~~ Henderson files).							
97-98	Focus Test					0 0	+30°		30/40

Spectr. Temp. ..... Dome Temp./Hum. 16.8°C 55.2% Transparency Conditions . Sl hazy 270

Focus ... 6.78 .....

Spectr. Temp. ..... Dome Temp./Hum. ~~16.2°C~~ 54% C AMBIENT

Exp. Mtr.	Seeing	Fig. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	~~Emulsion~~	P.H.	Program	Remarks	Quality
started again				CASS CCD	1800 l/mm G 5410	25u decker	* 6400B	26d		* actually 6416 at Row 512	center
2250	8"	7.48	GOIb					27i	Run pgm	2.365 AIRMASS	
~~2~~								28i			
								29d			
6700	~~5.5~~ -5.9	5.8 -6.9						30i	Run pgm	2nd shot tonight	
								31i			
								1i			
2084	~~5.75~~	7.5		Not Vesta in MAY 17						Δα 00 00 43 Δδ 00 06 51	
				It is most likely HD211676					1900 22 13 6 -13 48	V=6.09 sp HO	
Still Set 6.78		T now 6.2E									

1pg 271

sun mon

FOR Bu ATel SN 1993J

Date 1993 MAY 16/17 ..... Observers .H.K...T.n.....

Emulsion Batches:
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.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC 14499 500	Comp / Stellar	HUATMAN				00 08W	+56 25	FeNe Ap 1/8	5/46
501	BIAS(4)								
502 503 504	FLATS x3						Ap=1/8	TUNG	14s
505	Comp						Ap=1/8	FeNe	5s
506	HD 87901	10 03 03	+12 27 22	20 08 59			06560 in	Beam	15
507	"	"	"	20 09 58					46
508	Comp						Ap 1/8	FeNe	5
509	Comp						"	"	5
510	HD 84937	09 43 30	+14 16	20 20 21					751
511	Comp						Ap 1/8	FeNe	5
512	Comp						"	"	5
513	SN 1993J	1950 09 51 19	+69 15 27	20 44 26					
514	Comp						Ap 1/8	FeNe	5s
515 517	FLATS x3						Ap 1/4	TUNG	4s
518	BIAS(4)								

Spectr. Temp. ..... Dome Temp./Hum. +10.2°C 44 62H Transparency Conditions ... FINE 272

Focus ... 7.08 ..... Topup done by 14:30. Funs on & Dome open by 18 50

Spectr. Temp. ..... Dome Temp./Hum. ..... Tel Nominal Hrly (encoders) on HR 4295 at +56° dec

Exp. Mtr.	Seeing	Rtg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
T = +9.0°C				CASS CCD	150 l/mm G = 24.15	2.5" dekta	6563Å	3 4			
								1ci			
								5ci		11K ADU max	
								6ci			
2200		1.36 V	B7 V					7	Telluric Std		
2100								7ci	" "		
								8ci			
		~~8~~	~~F0~~					9ci	~~Std Star~~	ΔRA -00 00 27 Δdec -00 03 54	
470	3"	8	F0					10ci	Std Star		
								11ci			
								12ci			
	3"	12						13ci	SN 1993J	ΔRA -00 00 53 Δdec +00 02 12	
		~~24~~						14ci		(800 ADU max in 2 str columns.	
								15ci	14K max FOR FLAT		
								1ci			

Pg#2 273

Sun mon

Date 1993 MAY 16/17 Observers K.K. T.G.

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
14519	Hartmann - comp								10
~~14520~~	Hartmann - stell								10
cc14521	Comp						~~No~~ diffuser in Clear	FeNe	60s
14522	HD95735	10 57 54	+36 38	21 43 35		02 08W			37½s
23	Comp	"	"	~~21 54 00~~			Clear	FeNe	60s
24	HD95735	"	"	21 54 00		02 21W			47½s
25	Comp						Clear	FeNe	60s
26	Comp						Clear	FeNe	60s
27	BD+66 717	11 14 26	+66 23 24	22 13 37					1095s
28	comp						Clear	FeNe	60s
29	comp						"	FeNe	60s
30	HD123782	14 04.6	+49 56	22 41 33		00 02E			107½s
31	Comp						Clear	FeNe	60s
32	HD 123782	"	"	22 47 49					100s
33	Comp						Clear	FeNe	60s
34	BIAS (4)								

Spectr. Temp. ..... Dome Temp./Hum. +6.9°C 52% Transparency Conditions ... Fine ... 274

Focus ... 6:84 for 1800/G=4990

Spectr. Temp. ..... Dome Temp./Hum. +7.0°C 55% H c LAMBDA Tel East side of Piers Till 00 EST

Exp. Mtr.	Seeing	Pg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	~~Emulsion~~	P.H.	Program	Remarks	Quality
				CASS CCD	1800/4990	300μ	5140 Å			diffuser OUT	
2000		7.6	mb							Δ RA -00 00 40 Δ dec -00 07 24 High prop motion in Dec	
2000	3.4"	7.6	mb					21c	KK pgm	~~1/3~~ 1/3 blocked by dome 1st part	
								22c			
								23c			
1095		9.32	mV					24c	KK pgm		
								25			
								26			
5000	3.4	5.25	M2 III					27	std vel		
								26c1			
5,700								27	std vel		
								~~26c~~			
								1c			

pg #3 275 SUN/MON

Date 1993 May 16/17 Observers KK Tn

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
14535	comparison						clear	FeNe	60s
36	HD 124752 A	14 10 18	68 03	22 59 51	23 14 20				85s
37	comp						Clear	FeNe	60s
38	HD 124752 B			23 17 34					212
FM 00494 ABC	"	seeing test					note LOG mode, not "N"		
495 ABCD E,F	"	"	"	23 46	Tel Reversed	~01 W	+67 38	"N" mode	
39	Comp after	HD 124752B					Clear	FeNe	60s
40	bias (4x)						Clear	FeNe	60s
41	Comp				Tel west side now		Clear	FeNe	60s
42	BD+68° 946	17 370	+68 27	00 14 57					109s
43	comp						clear	FeNe	60s
→ 44 48	FLATS x5					01 35E	+60° dec Clear	TUNG	7s
49	Comp after	Sp contr Reset					clear	FeNe	60s
50	HD 146051	16 09 06	-03 26 00	00 54 05					32s
51	Comp								
52	BIAS (4)								

Spectr. Temp. ..... Dome Temp./Hum. +7.0C / 53% Transparency Conditions ... clear ... 27.6

Focus ... 6.84 ...

Spectr. Temp. ..... Dome Temp./Hum. +6.9C ... 53.9% RH

5140 Å medium NNW wind

Exp. Mtr.	Seeing	Rtg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	1800/ 4990	300μ	1024				
1500		8.8	KO					28	Asm/Sp KK		
								29			
								30	u	seeing may be too poor	
								(Both Fans on at start, NE Only one on now.)			
39×39						300μ			seeing Test (now std/stack)	Dome NORTH	
								31C;			
								1C;			
								32C;			
1800	3"	9.22	M5					33C;	Asm Sp KK	ΔRA 00 00 10 Δdec 00 05 03	
										max 8K ADU/pixel	
								32C;		watch for jump in comp pos.	
8900								34C;	std vel	5 oph max 1800 ADU	
								35C;			
								Jc			

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Emulsion Batches: .....

Date 1993 MAY 16/17 Observers KK TH

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC14553	HD146051	160906	-0326	00 5924					60s
54	Comp						clear	FeNe	60s
~~55~~ 55	Comp HARTMAN			01 07		00 17W	clear	FeNe	60s
56	Stellar HARTMAN						+3/16 Dec	n	60s
	Note Grating Re homed & Reset back to G=4990								
57	BIAS(4)								
58	Comp			01 40				FeNe	60s
59	HD146051	160906	-03 26	01 4455					44s
60	Comp							FeNe	60s
61	HD146051			01 4922					54s
62	Comp			01 51				FeNe	60s
63 - 65	FLATS x3					0103W	clear	JUNG	5s
66	BIAS(4)						-0343		

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions ... Fine 278

Focus ... 6.84 .....

Spectr. Temp. ..... Dome Temp./Hum. 5.8°C 55%

Exp. Mtr.	Seeing	Prg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
23K		274	M05 II			300μ Full	5140Å	20c;	Std Vel	Repeat M4X8K ADC	
								22c;		CCDT = -100.6°C	
	Note		a 40 pixel grating shift from					3c;			
			Exps previous to cc14549;					4c;		stellar vel Blue	
Bp contr		fail	was bad prob	shift field grating		40 pixels			Top up done	by 01 30	
			Before Comp cc14549					1c;			
								5c;	Comp		
Eq		*274	M05 II					6c;	Std Vel	* very bright :: guided in Dec mainly	
20K								8c;			
		n	n					7c;	Std Vel	dec guided again	
								9c;			
								10c;			
								1c;			
					All	to	Parsons &	Worm			

pg#1 279 Mon - Tues

Emulsion Batches: .....

Date 1993 MAY 17/18 Observers [KK] JH (CSS386 ahead of WWV only 3 secs). SOURCE. Diffused in .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC14567 68	Comp/Stellar	HURTmAN		20 08		00 16W	Clear 30°	FeNe	60/80
69	BIAS(4)								
70	Comp						clear	FeNe	60
71	HD95735	10 57 54	+36 38	20 22 36		00 56 W			680
72	Comp						clear	FeNe	60s
73	Comp						"	"	60s
74	BD+66 717	11 14 26	+66 23 24	20 42 39		01 16 W			1663
75	Comp						clear	FeNe	60s
76	Comp			21 16 12			"	"	60s
77	HD112956	12 35 12	+69 19 00	21 17 51		00 01 E			874
78	Comp						clear	FeNe	60s
79	BIAS (4) + FLATS x5		80 → 84 flts			00 00	+68° Clear	TUNG	6s
85	Comp						clear	FeNe	60s
86	HD124752	14 10 3	+63 03	21 46 30		00 37E			1402
87	Comp						clear	FeNe	60s

Spectr. Temp. ..... Dome Temp./Hum. +9.4°C 52.2% Transparency Conditions ...thin cloud..... 280

Focus ...6.90.....

Spectr. Temp. ..... Dome Temp./Hum. ..... Topup dome by 19:50

CCD → −100°C

Exp. Mtr.	Seeing	Rtg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	1800 l/mm G~4490	300 Full	5140A	3ci 4ci		stellar ~3 pixel Red 607 - 616 xplot	
								1ci			
								5ci			
4500	3"	7.6	mb					6ci	KH Asm Sp		
								7ci			
								8ci		MAX 7200 ADU	
1946	2.3"	9.32	MIV					9ci	Asm Sp-HK		
								10ci			
								11ci			
2500	2"-3"	8.2	dG6					12ci	Asm sp HK		
								13ci			
								14ci	FLAT MAX	~ 8K ADU Dome T = +7.3°C	
								15ci			
7500	2"	8.8	K0					16ci	Asm sp HK		
								17			

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Date 1993 MAY 17/18 Observers (HK) TN MTI

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC14588	HD124752B	14 10 13	+68 03	22 14 28		00 06W			230s
FM 496	ABCD EF	"	"	2 22 24		00 18E	+67 35	"N"	mode
589	Comp						clear	FeNe	60s
590	Comp						"	"	"
591	HD125782	14 04 36	+49 56	23 02 24		00 22W			109
592	Comp						clear	FeNe	60
593	BIAS (4)								
594 596	FLATS x3	14 04 36	+49 56			00 27W	clear	THNE	5 sec
597	Comp						clear	FeNe	60s
598	BD+68 946	17 37 00	+68 27	23 19 08		02 20E			180
599	Comp						clear	FeNe	60s
600	"						"	"	60s
601	HD158633	17 25 13	+67 24	23 56 45		01 55E			415
602	Comp							FeNe	60sec
603	BIAS (4)								

Spectr. Temp. ..... Dome Temp./Hum. +7.0°C 54.3% Transparency Conditions ... Fine ... 282

Focus ... 6.90 .....

Spectr. Temp. ..... Dome Temp./Hum. +6.0°C 57% * Exp still not balanced, will do next c hance

c: TAMBYA

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	~~Emulsion~~	P.H.	Program	Remarks	Quality
15*	2"	12	M (guess)			300u Full	5140A	18c	Asm Sp HK	~~800 photons 2deg~~ (good separation tonight)	3 30/1
47x47 pixels				faint one on slit;	No Fans			[HK	Seeing test]	Dome N Wind	
								19c			
								20c			
6K		5	M					21	Std vel	Fast. Guide/ Rec too	
								22			
								1c		Dome T= +6.5C	
								2c		MAX 9K ADU	
								23c			
2900	2"	922	M5					24c	Asm Sp HK	fainter one too SW of 8' SH1R	
								~~25c~~			
								25c			
5100	3"	643	dK1 ORG9V					26c	Asm Sp HK		
								27c		9.5 KADU max	
								1c			

283 pg#3

Date 1993 MAY 17/18 Observers [K.K.] T.H. (Mki checking)

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc14604	Comp			00 11			clear	FeNe	60s
05	HD149162	16 27.9	+3 28	00 13 39		00 10E			2.5.7.5
06	Comp						clear	FeNe	60s
07	Comp						"	"	"
08	HD146051	16 09 06	-03 26	01 06 06		00 20 W			76s
09	Comp						clear	FeNe	60s
13	FLATS x3	cc14611-13				00 25W	-3°41 clear	JUNG	5s
10	BIAS(4)								
14 15	Comp/Stellar	HARTMAN				00 34W	+28° clear	FeNe	60/80
16	Comp						clear	FeAr	60s
17	Nova Aql 1993	1950 19 10 30	+01 28	01 37 30					68s
18	" " "			01 40 14	edit				359
19	Comp						clear	FeAr	60s
20	Comp						"	"	60s
21	HD177724	19 00 49	+13 42	01 55 25					1/4 sec
22	Comp								
23-25	FLATS x3 +	cc14626	BIAS(4)				Apl/2	JUNG	5 sec

Spectr. Temp. ..... Dome Temp./Hum. +5.8°C 58% Transparency Conditions ... sl. cloudy 284

Focus ..... 6.90 ..... incr cloud

Spectr. Temp. ..... Dome Temp./Hum. +4.3°C 63%

Exp. Mtr.	Seeing	Pg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	~~Emulsion~~	P.H.	Program	Remarks	Quality
					1800 G 4990	300μ	5140	2ci		CCDT = -100.4°C	
1600	4"	8.84	KO KOV					7ci	Asm Sp Kt	some cloud	
								29ci			
			Sp contr failure		end of Comp			30ci	All CC145's to Persons; worn		
8000		274	MO.5 VI		(grating was dia blood all night though)			31ci	std vel	dec guided (cloud too)	
								32ci	(many Sp contr failures)		
								33ci			
								1co		Dome T=+5.4°C	
T=+5.0°C							5140	3/4ci	Focus	xplot 607-616 stellar L2 Red	
					K800/drum G=5980	300μ	6500Å	5ci		(not much change since 1st focus test)	
150?	4"	8					"	6ci		MAX ~550 ADU	
754							"	7ci		~~7 ADU max~~ @ hot pixel Real MAX ≈ 2K ADU	
							"	8ci			
								9ci			
26K		2.99						10co	Telluric		

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Pg#1 Wed/Thurs

Date 1993 MAY 19/20 Observers [B.H.] Jn [Blw]

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC14627									
28	Comp/Stellar	Hartman				00 20W	+4430	FeNe	5/7
29	BIAS(4)							Ap 1/8	
30									
32	FLATS x3	with OG560 Filter in source Beam					Ap=1/8	TUNG	145
34	Comp		OG560 Filter moved to Stellar posn.				Ap=1/8	FeNe	5s
35	HD87901	10 03 03	+12 27 22	20 17 07					19
36	"	"		19 10					17
37	Comp						Ap=1/8	FeNe	5sec
38	Comp						"	"	5s
39	HD84937	09 43 30	+11 16 00	20 31 03		02 31W			923
40	Comp						Ap=1/8	FeNe	5sec
41	~~BIAS~~(4)								
42	Comp		1900 processed				Ap=1/8	FeNe	5sec
43	SN1993J	09 47 10	+69 29 31	20 58 42		03 05W			1542
44	Comp							FeNe	5sec
45	SN1993J			21 27 39		03 22W			937
46	Comp							FeNe	5sec

Spectr. Temp. ..... Dome Temp./Hum. ~~+9.0°C~~ ~~70%~~ Transparency Conditions . Fine ... 3/hazy ... 286

Focus ... 7.04 .....

Spectr. Temp. ..... Dome Temp./Hum. ~~+7.5°C~~ ~~74%~~ HR4335 Tel encoder NOAM Star

Exp. Mtr.	Seeing	Pt. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	~~Emulsion~~	P.H.	Program	Remarks	Quality
				CASSCCD	150l/mm with blocker	265μ	6583Å	3 4c:	~~T+F~~ Focus test	Stellar UVS/ Red at #520 Row	
					G-2415			1c:	Tel East Side of Piers		
CCI4633 FLAT without filter								5c:	Previous	12K MAX Flats had no Filter.	
								7c:			
2300		1.36	B7V					8c:	Telluric Std	1.284 Air mass	
2000								8c:			
								~~9c:~~			
								9c:			
458	3"-4"	8	F0					10c.	Std Star for SN 1993J	1.365 Air mass	
								11c:			
								1			
		~~12.7~~		TV Int at 260 necessary SKY faintly visible on monitor				12c:		Air mass at start 1.190	
* 3		12.7						13c:	↓	* Exp meter finely Balanced Bad cosmic Rays	
								14c:			
26								15c:			
								16c:			

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pg#2

Date 1993. MAY. 19/20. Observers [Bln]...Ta.....

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC14647 49	FLATS x3			No filter	in Beam	03 25W	+69°02	TUNG	12s
50	BIAS(4)								
51 52	Comp/ Stellar	Hartmann		23 02		03 37W	clear	FeAr	40/60
53	Comp						"	FeAr	80s
54	HD 86360	09 52 09	+12 55	220759		04 17 W			200s
55	Comp			22 7442			clear	FeAr	80s
56	Comp, + [BIAS(4) CC14657]			Dome T = +6.5°C			"	FeAr	80s
58	HD112028	12 48 23	+83 57	225529		02 06W			150s
59	Comp						clear	FeAr	80s
60 → 64	FLATS x5					02 12W	+81325 clear	TUNG	35
65	Comp	for 6600 Å now.					clear.	FeAr	80s
66	HD112028	12 48 23	+83 57	23 3522		02 32W			625
67	Comp						clear	FeAr	80s
68	Comp [Tel	west side of Piers on BM CAS s				09 25 E	"	"	80s
69	BMCAS	00 48 36	+63 33	23 56 52		09 14 E			440
70	BIAS(4)								

Spectr. Temp. ..... Dome Temp./Hum. +7.2°C 75% Transparency Conditions Cl. hazy 2B8

Focus .. 6.84 for 1800 ln/mm grating

Spectr. Temp. ..... Dome Temp./Hum. +5.8°C 78%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	150 ln/mm	250μ	6563Å	17c.			
								1ci			
	T = +7.2°		set 6.84		1800 ln/mm G 4565	250μ decker	4475Å	3ci 4ci	Focus	x plot 336 - 345 Right on	
								5ci			
32.7K	4"	B 5.22	B9 IV					6ci	SB Bln Bln pgm	93,600 photons > 300/1 S/N	
								19ci			
								20ci			
3.6K	3"	V 5.32	A2					21ci	Bln pgm	≤10K ADU MAX South & Brighter of pair	
								22ci			
								23ci			
					1800 ln/mm G=6055	250μ	6600Å	24ci	Bln pgm	96K photons above bkgnd Δ 300/1 S/N	
15.5K	3"	V 5.32	A2					25c.		9K ADU max	
								26ci			
								26ci			
200	6"							27ci		Δ RA +00 00 03 Δ Dec -00 00 48 MAX 900 ADU	
								1ci		Hi air mass = 2.58	

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Pg #3

Emulsion Batches: .....

Date 1993 MAY 19/20. Observers MKI / TN .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc14671	Comp for BMCAS						clear	FeAr	80s
672	BMCas	0048.6	+6333	000905		0825E			
673	Comp						clear	FeAr	80s
674	Comp						"	"	"
~~675~~	~~Nova Cyg 92~~	~~2743~~	~~+52 17 39~~	~~01 03 46~~					
~~676~~	~~Comp~~								
~~677~~	~~BIAS(4)~~								
FM 00049 7 ABCD, E, F	HD 163075	17 49 15	+46 40 10	0210		00 05E	+46°	"N" mode	

Spectr. Temp. ..... Dome Temp./Hum. 5.8° 78.5% Transparency Conditions ... S/ hazy ... 290

Focus .... 6.84 .....

Spectr. Temp. ..... Dome Temp./Hum. ..... c LAMBDA No FANS on tonight,

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	1800 l/mm G=6055	250μ	6600Å	~~26c~~			
250								~~28c~~	BM cas pgm		
								~~26c~~			
								26c			
	3"	=120						27c	Lost.	CRASH on WFITS (CCD3 → Hamilton prob a problem)	
39×39		6.45	KO	4×67ms, 2×133ms	Above 250μ slit shutter removal				Seeing Test	No wind, Dome WNW	

291 pg#1 Thurs / Fri

Date 1.9.93. MAY 20/21 Observers [R.m.] ..... F.br. / J.H.

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CCD 14675,6	FOCUS TEST								
77	BIAS (4)								
78	COMP							FeAr Cu	60s
79	HD 87901	10 03 03	12 27 22	20 38 53					49
80	COMP							FeAr Cu.	60s
81-83	FLAT x 3							TUNG. 1/2	8s
84	COMP (shutter pulled out of slot)								
85	HD 103095	11 47 13	38 26 10	21 03 20					509
86	COMP (DEKKER OUT)							FeAr Cu	60s
FM00698AMP	ABCD, E/F SEEING TEST. HD 103095			20 58		0044W	+37 45	"N" mode	
87	COMP (DEKKER IN).								
88	HD 103095	11 47 13	38 26 10	21 21 16					516
89	COMP							FeAr Cu	60s
90	BIAS (4)								
91	COMP							FeAr	60s

Spectr. Temp. ..... Dome Temp./Hum. 10.3°C 67% Transparency Conditions . P.M.T. Cloudy 292

Focus ..... 6.84 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

FANS on + demo oper by 1920 EST

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	1800 l/mm G=5910	250 decker	6400A		485	CCD PMT 0 50 1024 4 1	
35K.									Telluric Std		
4700						250u decker OUT			std vel		
39x39	2"	6.45	GSVp	4x67ms + 2x133ms		250u above decker out			Seeing test	Done WSW, no wind	
1500		5.45	GSVp			250u decker in now			std vel	300/1 S/N	

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Date (2) MAY 20/21 Observers Rm./Fbr./Tu.

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC14692	HD144579	16 01 30	39 29 00	21 ~~22~~:42:15		02 32E			771
93	Comp						clear	FeAr	60s
17-96	FLATS X3							Tung Y2	8s
97	Comp						Clear	FeAr	60s
98	Y OPH HD 162714	17 47 17	-6 07.2	22:07:27					1024?
99	Comp						Clear	FeAr	60s
700	Comp						n	FeAr	60s
~~700~~ 701	HD171232	18 28 30	+25 25	22 35 16					957s
702	Comp						Clear	FeAr	60s
703	Bias (4)								
704	Comp						Clear	FeAr	60s
705	HD203156	21:15:23	+37 49 00	23 02 05					925
706	Comp						Clear	FeAr	60s
707	Comp						Clear	FeAr	60s
708	~~CC~~ HD198726	20:47:13	+27 52 30	23 34 14					776s

Spectr. Temp. ..... Dome Temp./Hum. +8.9°C 70% Transparency Conditions .. Fine .....

Focus ..... 6.84 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
~~12~~80	3"	6.66	G8 IV			25μ decker	6400A	7ci	STD vel		
3900		6.15	G0 Ib						Rm pgm	AIR MASS 3.7-3.3	
2670	4"	7.73	G8 III					10ci	~~Rm pgm~~ std vel		
~~Grism~~								11ci			
										+8.0°C	
								11ci			
500		5.8	~~F2~~					12ci	Rm pgm		
5850		5.75	G0 Ib					13ci	rm pgm		

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#3

Sgs = Sugars

Emulsion Batches:

Date ..May 20/21..... Observers [Rm] ..Sgs../..Tn./.Fkr

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc14709	COMP						clear.	FeAr	60s
710	BIAS (4)								
711	COMP						Clear	FeAr	60s
712	HD 214975	22 36 55	56 18 24	23 58 25					1925
713	Comp						Clear	FeAr	60s
714	COMP						Clear	FeAr	60s
715	HD154417	17 00 12	00 51 00	00405					380s
716	COMP						Clear	FeAr	60s
~~717~~ 719	FLATS x3					00 30E	+00 40	Tung Ap 1/2	8s
720	Comp						clear	FeAr	60s
721	HD 173297	18 39 20	-20 45 00	01 01 45		01 28E			2224
722	Comp						clear,	FeAr	60s
723	comp						a	4	60
724	HD171391	18 29 30	-11 03	01					192
725	COMP						CLEAR	FeAr	60s

Spectr. Temp. ..... Dome Temp./Hum. +7.5°C 76% Transparency Conditions Fine 296

Focus 6-84

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Rtg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
								14ci			
										+7.7°C	
		[illegible]	[illegible]					15ci			
2608	3q	8.40	G0Ib					16ci	Rm pgm		
								17ci			
4850		6.01	G0V					18ci	Std Vel		
								19ci			
								20ci		MAX ≈ 13K ADC	
		[illegible]	[illegible]					21ci			
2630	5q	7.48	G0Ib					22ci	Rm pgm	(POSSIBLE) COMPANION WSW 27" OF ARC	
								23ci			
								24ci			
4300		5.14	G8III					25	Std Vel		
								26ci			

(#4) 297

Date MAY 20/21 Observers [Rm] Sys./Tn./Fbr

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc 14726	BIAS X4								
27	COMP						Clear	FeAr	60s
28	HD 203156	37 49 00	21 15 23	02 00 51					47½s
29	COMP						Clear	FeAr	60s
30	COMP						Clear	FeAr	60s
31	HD 171232	18 28 30	25 25 00	02 18 31					1008s
32	COMP						Clear	FeAr	60s
33-35	FLATS X3					HA 01 4E	[illegible]	Tung½	8s
FM000499	ABCD HD 171232 EF	18 28 30	+25 25 00	02 48		00 04E		'N' mode	

Spectr. Temp. ..... Dome Temp./Hum. ...+6.7°C Transparency Conditions ...SI. hazy..... 298

Focus .....6-84.....

Spectr. Temp. ..... Dome Temp./Hum. ...79.6%...

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
							6400A	26ci			
		[redacted]	[redacted]					27ci			
6600		5.8 59	F2					28ci			
								29ci			
								30ci			
4000	3"	7.73	G8 III					31ci	Std Vel		
								32ci			
								33ci			
39x39	2.5"	7.73	G8 III	4x67ms+2x133ms		25u no decker			Seeing Test	Dome SW Funson all night, No wind	

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numbers should be RF series, not RE

Emulsion Batches: .....

Date 1993 May 25/26 Observers KK/Fbr

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
~~RE~~ RF 00001 ~~4431~~	comparsion								
2	comparsion								
3-6	Flats × 4						R60 filter	Tung clear	60s
~~4437~~	~~Darks~~ comp						no diffuser	FeNe clear	60s
~~4438~~	HD130841	14 45.3	−15 38						
~~4439~~	comp							FeNe	60
~~4440~~	HD172167	18 33.6	+38 42						
~~44411~~	HD 172167	18 33.6	+38 42						
~~4442~~	HD 172167	18 33.6	+38 42	00 22	00 27				
~~4443~~ 13	comp			00 28 35				FeNe clear	60s
~~4444~~ 14	comp							4	4
RF 000 15 ~~4445~~	dark			01 04					120

Spectr. Temp. ..... Dome Temp./Hum. 9.0C / 66.9% Transparency Conditions Thick cloud w/ 300 occasional hole

Focus 600, shift -.07 pix

Spectr. Temp. ..... Dome Temp./Hum. ..... Computer clock off

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
								header times		will be wrong	
				Rbenfed	I600/40.4°	7x50	Reticon	87wA		1000 ADU max	
										2700 ADU max	
4000s		2.75	A3IV							only 100 ADU, bad pattern	
8000	4"	0.03	A0 V								
80000		"	"							1500 ADU max	
80000		"	"							1500 ADU	
8200											
										grating capped	

pg#1 301

Wed-Thurs

Date 1993 MAY 26/27 Observers [B+I] In/Fbr/..... CSS Times (Headers) 15 secs ahead of WWV

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc14736	Bias (4)						Diffuser IN		
37-38	Focus Test	Comp/Stellar Hartmann		Note	R60 filter in Comp's Tung Beam for All 150W/mm ~~WORK~~ PROBABLY OK anyway except for FLAT?				
39-41	Flat x 3			20 15				TUNG Y8	15s
42	Comp						Ap = 1/8	FeNe	5s
43	HD87901	10 03 03	+12 27 22	20 18 17					13s
44	"	"	"	20 19 18					40s
45	Comp						Ap = 1/8	FeNe	5s
46	"						"	"	5s
47	HD84937	09 43 30	+14 16 00	20 28 46		02 52 W			67½
48	Comp						Ap = 1/8	FeNe	5s
49	"		1900 now				"	"	"
50	SN 1993J	09 47 10	+69 29 31	20 49 20					300
51	"	"	"	21 11 25		03 45 W	~~Ap = 1/8~~	~~FeNe~~	1575 ~~5sec~~
52	Comp						Ap = 1/8	FeNe	5sec
53 55	FLATS x 3					03 47 W	+69 04		
56	BIAS (4)								

Spectr. Temp. ..... Dome Temp./Hum. 13°C ..... 86% Transparency Conditions . Clearing 302

Focus ..... 6.95 .....

Spectr. Temp. ..... Dome Temp./Hum. 10.9°C .. 66% (LAMBDA)

CCD T -> -100°C Top up by 20 EST

480 0 50 1024 4 1 CCDFMT

Exp. Mtr.	Seeing	Fwd Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	150 l/mm with decker	250μ	6563Å				
OG 560 in for 150 l/mm exps.		Stellar Beam			G=2415				Focus Test		
2100		1.36	B7V						Telluric Std	MAX = 12K ADU	
1800									" "	" " "	
										Δ RA -00 00 26 Δ dec -00 04 24	
460	3"	8	F0					6ci	Std Star for SN 1993J	1.424 AIRMASS MAX 4K ADU	
								7ci			
								8ci			
48		12.5						9ci		MAX = 570 ADU @ Hα AIR MASS @ 20 57 = 1.203	
53								10ci			
								5ci			
								4ci			
								1ci			

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Pg#2

Date 1993 MAY 26/27 Observers [RM] Th. / Fbs.....

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc14757	BIAS(4)								
58	Comp							FeAr Clear	80s
59	HD87901	10 03 03	+12 27 22	22 09 12					23sec
60	Comp							FeAr Clear	80s
61	Comp							"	"
62	HD103095 *	11 47 12	+38 26 00	22 18 43		02 33 W			
63	Comp							FeAr Clear	80s
64	Comp							"	"
65	HD203156	21 15 23	+37 49	22 35 14		06 24 E			1124s
66	Comp							FeAr Clear	80s
67	BIAS(4)								
68	Comp							FeAr Clear	80s
69	HD144579	16 01 30	+39 25 36	23 06 12		00 48 E			550s
70	Comp							FeAr Clear	80s
71 → 73	FLATS x3						Ap = 1/2	TUNG	7sec

Spectr. Temp. ..... Dome Temp./Hum. ~~[illegible]~~ 10.5°C 59%H Transparency Conditions ..... Clear 304

Focus ..... 6.80 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Pix/Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	1800 λ_c=5910	250 μ	λ_c=6400	1c$_1$	(Focus Tests	lowest s/l 2.5 pixel Red stellar)	
14K		1.36	B7V					13c$_2$	Telluric Std	4.2K ADU MAX	
								3c$_3$			
3370	3"	6.45	G8Vp					11c$_4$	std vel	*The big proper motion one	
								3c$_5$			
								3c$_6$			
6025	8"	5.8 -5.9	F2					12c$_7$	HR8157 Rm pgm	AIR MASS 3.117	
								14c$_8$			
								1c$_9$		Dome T = +9.5°C	
4000	4"	6.66	G8V					15c$_{10}$	std vel		
								16c$_{11}$			
								17c$_{12}$		12K ADU max	

pg#3 305

Date 1993 MAY 26/27 Observers [illegible] Tn./Fkr.

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
ABCD EF FM000500	HD144579	16 01 30	+39 25 36	22329		00 34E		"N" mode	
cc14774	Comp							clear	FeAr
75	HD162714	17 47 17	-06 07 12	234716					416
76	Comp								80s
77	Bias(4)								
78	Comp							FeAr Clear	80s
79	HD214975	22 36 55	56 18 24	001022		05 44E			2629
80	Comp							FeAr Clear	80s
81	Comp							FeAr Clear	80s
82	HD198726	20 47 13	27 52 30	010159					242
83	Comp							FeAr Clear	80s
84	Bias(4)								
85	Comp							FeAr Clear	80s
86	HD171232	18 28 30	+25 25	011514		00 56E			
87	Comp							FeAr Clear	80s

Spectr. Temp. ..... Dome Temp./Hum. +8.9°C 56.8%H Transparency Conditions ... FINE 306

Focus .... 6.80 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

FANS on Since 2000 EST

Exp. Mtr.	Seeing	Pg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
47 x 47 grids		6.66	G8V	4x67ms+2x133ms	docker OUT	250u			Seeing Test	Dome SW, Med NNW wind 51 gusty wind	
				OASS CCD	docker Back in		6400Å				
4300	4"							19c	Rm pgm		
2560	4"	8.4	G0IV					20c	Rm pgm	1.695 AIRMASS @ 00:40 EST	
4500		5.75	G0IV					21c			
								3c			
3540		7.73	G8III					22ci	Std vel		
								23c			

pg# 307

Date 1993. MAY 26/27... Observers [Rm.]....Tm./Ftr.....

Emulsion Batches:
.....
.....
.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc14788	Comp						clear	FeAr	80s
89	HD173297	18 39 20	-20 45 00	01 44 14		00 28 E			1874
90	Comp						clear	FeAr	80s
→91/93	FLATS x 3					00 24E	-20 41	TUNG Ap=1/2	7s
94	Comp						clear	FeAr	80s
95	HD203156	21 15 23	+37 49	02 28 27		02 41 E			465
96	Comp						clear	FeAr	80s
97	BIAS(4)								
98	Comp						clear.	FeAr	80s
99	Nova Aql 93	19 10 30 1950	+01 28	02 44 10					878
cc14800	Comp						clear	FeAr	
01/03	FLATS x 3						Ap 1/2	TUNG	8
04	Comp at 6600Å						clear	FeAr	80
05	Nova Aql 93	19 10 30 1950	+01 28	03 10 52					453
06	Comp						clear	FeAr	80s

Spectr. Temp. ..... Dome Temp./Hum. 7.5°C ..... 65.5% H Transparency Conditions . Fine . but getting very gusty again

Focus ..... 680 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	~~Pig~~ Mag.	Sp.	Inst.	Grating/ Tilt	Slit	~~Emulsion~~	P.H.	Program	Remarks	Quality
	~~6"~~	~~748~~	~~G016~~	CHSS CCD	1800 l/mm G=5910	250 decker	6400Å	24ci			
3370	8"	748	G016					25	Rm pgm		
								26ci			
								27ci		MAX 10K ADU	
								28ci			
6000	3-5"	~~58~~ 59	F2					29ci	Rm pgm	~~+30~~	
		~~58~~ ~~59~~	~~F2~~					30ci			
								1ci		Dome T = +7.2°	
2000	5"	748						31ci			
								~~32ci~~			
					1800 G=5910		6400Å	7ci		MAX 13K ADU	
					1800 G=6055		6600Å	3ci			
1076								32ci		MAX ~ 11 K ADU	
								34			

pg#5 309

Date 1993 MAY 26/27 Observers Th./Flet.

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
C14807	Comp FOR HD177724	+9 00 49	13 42				clear	FeAr	80s
08	HD177724	19 00 49	+13 42	03 32 25		00 37			125
09	Comp						clear	FeAr	80s
10	Comp						"	"	80s
11	Nova Aql 93	19 10 30 (1950)	+01 28	03 44 13					431
12	Comp						clear	FeAr	80
13 17	FLATS x 5						Ap 1/2	TUNG	
18	BIAS (4)								

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions Fine .....

Focus .... 6:80 .....

Spectr. Temp. ..... Dome Temp./Hum. +6°C 65% H

Exp. Mtr.	Seeing	Pl. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
					1800 l/m/m G=6050		6600Å	3	Telluric		
27K		2:99						4ci	"	Air mass 1.163	
								3ci			
								3ci			
1006		8						5ci		Looks same as previous	
								3ci			
								2ci			
								1ci			

311
#1

Thurs - Fri

Date 1993 MAY 27/28. Observers F.Ebr./T.n.

Emulsion Batches:

Echelle Flexure Tests

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
~~CE0[illegible]~~	Focus Test	Reported To be Right on in focus, but apparently not written. Ed.							
CE0672	Bias (4).							Red Filter in	
73	Comp		+4500	21 3825		09 E	+45°	THAr	
74	"			21 40 28		08 E			
75	"					07 E			
76	"					06 E			
77	"					05 E			
78	"					04 E			
79	"					03 E			
80	"					02 E			
81	"					01 E			
82	"			21 49 16		00			
83	"					01 W			
84	"					02 W			
85	"					03 W			

Spectr. Temp. ..... Dome Temp./Hum. +17.3°C 52% Transparency Conditions ... Light Rain 312

Focus ... .220 .. um touched by us, ie clamps for Cam focus not touched by us.

Spectr. Temp. ..... Dome Temp./Hum. ..... C LIMBO

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program		Remarks	Quality
				Echelle CCD	7600Å W=set.277 Blazed H=0.225			echelleTilt 1905			FORMAT = 200/0/64/1024/8/1	
0 CGAin CCDT → -100°C					T+H ~~1905~~ x grating Tilt = .5647		6619				0 0 ~~128~~ 1024 81	
								3ci	+3.21	+5.2	Dome T = +12.2°C	
								4	3.56	4.7		
								5	3.80	3.9		
								6	3.82	3.1		
								7	3.61	2.4		
								8	3.19	1.6		
								~~9~~	2.52	0.8		
								~~10~~	1.83	0.4		
								~~11~~	1.01	-0.1		
								~~12~~	0	0	during eqv Big dome IMAN TO NW	
								13	-0.90	0.01		
								14ci	-1.75	0.05		
								9ci	-2.65	1.48		

313
#2 Tu - Fri

Date 93-May 27/28 Observers For / Tu

Emulsion Batches:

Echelle Flexure continued

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
86	Comp		+4500			04W		ThAr	
87	"					05W			
88	"			21 58 45	05 30W 05 30W	~~06 E~~			

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .. Rain .....

Focus ... 220 .....

Spectr. Temp. ..... Dome Temp./Hum. 12.1°C ~~55~~ 61%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
							6619	10ci	-3.38 2.87		
								11ci	-3.73 4.40		
								12ci	-3.94 5.60		
All Tel movements made smoothly & slowly ± 15 secs hour to hour moving westward.											
Note - Because of CCD shutter problem, all exps done with expose, econ h, 2 sec interval, econ K, readout sequences.											
∴ exposure levels vary a bit.											

315
pg1 FLexure Tests, done as last set But Torque Limiting clamp Emulsion Batches:
screws now Tightened. (Expimeter side screw Tightened 1st)

Date 1993 MAY 29 AFTERNOON Observers T.n

OCCAin, even though Header doesn't indicate such

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
ce 06189	Comp			13 27 34		09E	+45°	ThAr	4 sec
190						8E			
191						7E			
192						6E			
193						5E			
194				40 21		4E			
195						3E			
196						2E			
197				45 31		1E			
198						0			
199						1W			
200						2W			
201						3W			
202						4W			
203				14 09 47		5W			
204				12 15		5 30W			

Spectr. Temp. ..... Dome Temp./Hum. +12.5°C 56% H at 13 EST Transparency Conditions ..... 316.

Focus ....220.....

Spectr. Temp. ..... Dome Temp./Hum. +13.2°C 53% H @ 14 14

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
Also, this set is other side of Blaze of previous flexure set					7600A / 300 l/mm / 4=.225	.277	6619P	2	edelle 1705	Dome NE for start	
					.5628			3	Note Grating Header has other side of Blaze indicated For Following Tests. It is wrong.		
								4			
								5			
								6			
								7			
								8			
								9	"		
								10	"		
+ ce06205 is B/HS(4) 97 START of Tests								11	"	Big Dome Turn To NW	
START 13 18 13								12			
								13			
								14			
								4			
								6			
								8			

317
pg2

CSS386 TIME & Date corrected by 2 1 EST

Emulsion Batches:
..Date had been out - 1 day
.....since MAY 21 0250.
.....

Date 1993 MAY 29/30.. Observers [K.K]..T.n....F.kr..after Tours

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	~~Ending~~ START Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
ce 06206	Comp [Tel non movement Stability Tests] no			1	1430	0530W	+45°	ThAr	4secs
7	" no one in Dome. Run by batch.				1531				
8	" Batch = nmTEST.BAT. ~~Log~~				1632				
9	" CCD LOG file saved as,				1733				
10	" nmTEST.LOG (~~Includes prec~~ (includes previous Flexure Log)				1834				
11	BIAS(4) now	30C GAIN,	~~CCDFIMT~~	23 3128					
12	Comp							ThAr	2s
13	HD137909	1523.7	2927	235040		054W			1040
14	Comp							ThAr	2s
15	HD137909	15 23.7	+2927	00 0947		01 12 W			1012
16	Comp							ThAr	2s.
17	BIAS(4)								
18	Comp							ThAr	2s
19	HD136202	151412	+02 0900	00 35 26		01 59 W			1777
20	Comp							ThAr	2s

Spectr. Temp. ..... Dome Temp./Hum. +13.2°C 39% H of 1938 Transparency Conditions ..CLEAR FOR TOURS. 318

Focus ....720.....

Thin cloud for pgm observing

Spectr. Temp. ..... Dome Temp./Hum. +8.4°C 52% H @ 0055 The (7600 Å Blaze CROSS 300l/mm)

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
							6619R				
					300l/mm X=.5628	TILT 17.00°					
B/HS	looks OK now. It was noisy at 90CGA in clearing Tour							1c:		Dome T = +9.4°C CCDT = -100°C	
								3c:		2400 ADU peak	
49	POOR	V 3.66	FOp	Echelle	300l/mm .277	.25H		4c:	Asm SpKK	Faint guide image 400ms Int for guide camera	
								3c:			
44	NOT GOOD	V 3.66	FOp					4c:	Asm SpKK	~~Air mass~~ PARTLY CLOUDY.	
								3		MAX 11K for comp	
								1c.		Dome T = +9.1°C	
								3c;			
20	BETTER	V 5.06	F8 IV-V					5c,	Std vel	cloudy a bit (Peak 2500 ADU) Air mass 1.456 at start	
								2c:			

pg 319

Date 93 May 29/30 Observers [KK] Tu/Thr

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CCD 6221	HD136202	15 14 12	+02 09 00	01 06 58		02 32 W			1795
22	Comp							ThAr	2sec
23	BIAS(4)								
24	Comp							ThAr	2s
25	HD177724	19 00 49	+13 43	01 43 33					751
26	Comp							ThAr	2sec
27-31	Flat x5							Tungsten	2sec
32-36	Flat x5								
37	Comp							ThAr	2s
38	HD177724	19 00 49	13 43	02 16 06					490
39	Comp							ThAr	2s
40	Comp							"	"
41	HD136202	15 14 12	+02 09 00	02 29 21		3 42 W			1074
42	Comp								2s
43	BIAS(4)								

Spectr. Temp. ..... Dome Temp./Hum. +8.7°C 50.7% Transparency Conditions ... incr. cloud 320

Focus ... .220 .....

Spectr. Temp. ..... Dome Temp./Hum. +8.5°C ... 50.0% 30 again

Exp. Mtr.	Seeing	Tel. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
13		5.06	F8 IV-V	echelle CCD	W .277 set H .225 set		66/19	5c;	Std vel		
					300 ln/mm x = .5628	17.05		3c;			
								1c;		* Check Henories For	
								2c;			
34	OK	2.99	A0 V					6c;	Telluric Std		
								3c;			
							W=.277 H=.205	3c,		~10K MAX.	
					300 ln/mm x = 0.5645	19.05	W=.277 H=.205	3c;		~10.5 MAX.	
										7th ORDER Down #2 center column H&D	
12							W=.277 H=.225	3c;	Telluric Std	Airmass 1.167	
								.			
52		5.06	F8 IV-V					5c;	Std vel	≈ 600 ADU Peak AIR MASS 2.127	
								2		8.8 K max for comp	
								1c,			

m4 321

Emulsion Batches:

Date 93 MAY 29/30 Observers [KK] Th. / F. Hr

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CE06244	Comp							ThAr	2s
245	HD137909	15 23 42	+29 27	02 55 31		04 05W			1393
246	Comp							ThAr	2s
247	HD137909			03 20 20		04 26W			1176
248	Comp							ThAr	2s
249	BIAS(4)								
50	FOCUS TEST								2s
51									

Spectr. Temp. ..... Dome Temp./Hum. +8.3°C 48.5% Transparency Conditions .. hazy to thin cloud

Focus .... .270 .....

Spectr. Temp. ..... Dome Temp./Hum. +8.3°C 49% 322

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
					19.05 300/.5645		6619				
250								4c;	Asm Sp Kk	2500 ADU Peak above bkgnd AIR mass 1.480	
170								4c;			
								~~7~~ 2;			
								1c;			
Slit Set .270			T = +8.2°C						-.23pix	[Center OUTBOARD 2.3 Pixels Red]	
					HII to Perseus & WORM to late						

#1 323

Date 93.May.31/Jne1.... Observers .....Tn./.Fbr.....

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc06252	Bias (4)								
53-54	Focus Test.								
55	Comp		+45 00	20 3124		09 E		TWAr	2s
56	"		"			08 E			"
57	"		"			07 E			"
~~58~~ 58	"		"			06 E			"
59	"		"			05 E			"
60	"		"			04 E			"
61	"		"			03 E			"
62	"		"			02 E			"
63	"		"			01 E			"
64	"		"	~~20 4522~~		00			"
65	"		"			01 W			"
66	"		"			02 W			"
~~67~~ 67	"		"			03 W			"

Spectr. Temp. ..... Dome Temp./Hum +11.6°C ... 72% Transparency Conditions ... Cloudy .....

Focus ..... 220 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

CCDT > −100°C

00128 10248 1 CCDCMT

324

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				Echell CCD	19-05_300 0.5645	60μ = 100μ =	w=.277 H=.225				
									−0.34 pix		
								3ci	+2.32 5.38	30 CGAIN	
								4ci			
								5ci	2.41 3.86	DOME T = +11.5°C	
								6ci	2.17 2.84		
								7ci	1.88 1.86		
								8ci	1.50 1.12		
								9ci	.98 .37		
								10ci	.62 −.03		
								11ci	.27 −.18	DOME TURNED TO NW before 0 hr exp	
								12ci	0 0	LOGGED ON MK III	
								13ci	−.24 0		
								14ci	−.42 1.42		
								100i	−.78 2.78		

325

Date 93 May 31/June 1 Observers Tn/Fbr

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
ce06268	Comp		+4500			04W		TWAr	2s
69	"		"	20 48 22		05W			
70	"		"			0530W			
[redacted]	[redacted]		[redacted]						
CLAMPS LOOSENED AND RE-TIGHTENED					Note exp meter side clamp loosened 1st and				
71	Comp		+4500	21 06 37		09E		TWAr	2s
72	"		"	"		08E		"	"
73	"		"			07E		"	"
74	"		"			06E		"	"
75	"		"			05E		"	"
76	"		"			04E		"	"
77	"		"			03E		"	"
78	"		"			02E		"	"

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions 326

Focus ..... 220 .....

Spectr. Temp. ..... Dome Temp./Hum. ..... All movement E-W for Test by Tm gradually moved ≈ 20-30 secs/hr

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				19.65 – 300 0.5645			6619Å	11ci	−1.00 4.33	30 CGAIN	
								12ci	−1.11 5.80		
								13ci	−1.14 6.64		
Retightened Last just in case that's relevant [toague limit sure limits me]											
								3ci	2.18 4.89		
								4ci	2.24 4.31		
								5	2.02 3.56		
								6	1.73 2.69		
								7	1.38 1.88		
								8	.99 1.15		
								9	.49 .55		
								10	.22 .17		

#3 327

Date 93 May 31/Jun 1 Observers T-/Fbr

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
79	COMP		+4500			01E		TWBr	2s
80	"		"			00		"	"
81	"		"			01W		"	"
82	"		"			02W		"	"
83	"		"	21 1908		03W		"	"
84	"		"			04W		"	"
85	"		"			05W		"	"
86	"		"	21 2134		0530W		"	"

Spectr. Temp. ..... Dome Temp./Hum. +11.4°C 70.3% Transparency Conditions ... Cloudy 328

Focus ..... 22.0 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
								11	0 0		
								12	-.12 .25		
								13	-.17 .55		
								14	-.22 2.04		
								10	-.44 3.37		
								11	-.57 4.80		
								12	-.57 6.30		
								13	-.54 7.02	Dome T = +11.4C	

Pg#1 329

Date ...JUNE...1/2... Observers ...Fbr/Sgs.....

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC14819	BIAS (4)								
20-21	FOCUS TEST								
22	BIAS (4)								
23	COMP						CLEAR	FeAr	60s
24	HD173297	18 39 20	-20 45.0	00 26 26					1488
25	COMP						CLEAR	FeAr	60s
26	BIAS(4)								
27	COMP						(Clear)	FeAr	60s
28	HD177724	190049	1342	005921			clear	⊘	120
29	COMP						Clear	FeAr	60s
30 - 32	FLAT x 3						n = 1/4	TUNG	
33	COMP							FeAr	60s
34	HD214975	223655	56 18	012527					1545
35	COMP								
36	BIAS(4)								

Spectr. Temp. ..... Dome Temp./Hum. +11.4°C 55.5% Transparency Conditions . PARTLY CLOUDY 330

Focus ..... 6.80 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	1800 l/mm G=5910	250 decker	6400 Å				
										MK III TIME + DATE FAILURES	
		~~7.48~~	~~60 Ib~~							CLOUDS JUST AFTER	
4000		7.48	60 Ib						Sgs Pgm	OPENING UP	
										CLEARED @ 1:00 am EDT	
27K.									TELLURIC		
										DOME A LITTLE WET.	
3050									Sgs Pgm.	HUMIDITY ≈ 93%	

(1) 331

Date JUNE 2/3 Observers SGS/FBR

Emulsion Batches: .....

.....

.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC 14837	~~FOCUS TEST~~ BIAS (4)								
38-39	FOCUS TEST								
40	BIAS (4)								
41	COMP						~~CLEAR~~	~~FeAr~~	~~60s~~
42	HD145001	16 03 36	+17 19	234059.			CLEAR	FeAr	~~60s~~
43	Comp						clear	FeAr	60s
44	COMP						CLEAR	FeAr	60s
45	HD173297	18 39 20	-20 45	23 59 20					3309
46	COMP						CLEAR	FeAr	60s
47	BIAS (4)								
48	COMP						Clear	FeAr	60s
49	HD177724	19 00 49	+13 42	01 03 00					119
50	COMP						CLEAR	FeAr	60s
51	COMP						CLEAR	FeAr	60s
52	HD214975	22 38 53	+36 34	01 14 55					193

Spectr. Temp. ..... Dome Temp./Hum. 13.9°C / 52.2% Transparency Conditions MAINLY CLOUDY : 332

Focus 6.75 SOME HOLES

Spectr. Temp. ..... Dome Temp./Hum. ..... BRIGHT MOON!!!

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	1800 l/mm G=5910	250 dekker	6400Å				
										FOCUS PERFECT!!!	
		½									
4745/2520		5.00	G5 III						RV Std	THROUGH CLOUDS. DOME LIGHTS ON FOR ½	
4200	AWFUL! 6"-7"	7.48	G0Ib						Sys Pgm	THROUGH CLOUDS	
[redacted]											
29.8k									TELLURIC		
350		8.40	G0Ib						Sys Pgm	SCRUBBED – CLOUDS	

(2) 333

Date JUNE 2/3 Observers Sgs/Fbr

Emulsion Batches: .....

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
53	COMP						CLEAR	FeAr	60s
54-56	FLATS						n=1/4	Tung	
June 3/93 Tu	[Focus and Blue Region ID For				Sr+pgm]				
	Comp/Stellar HARTMAN focus				22 53	00 08W	+31° Dec		*
							CLEAR	FeNe	20/30
	Not written, as we didn't WORK AT this posn after all.								

Spectr. Temp. ..... Dome Temp./Hum. +11.7°C 55.5% Transparency Conditions CLOUDY 334

Focus 6.75

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
Set 6.83, T=+13.7				CASS CCD	1800 l/mm G=4200	2" Slit Decker	3940Å		Focus Test	Central Wavelength exact	
* Note exps 20/30 for Both exps of equal strength.										Row # 420 stellar UV Spectral BLUE Row # 860 stellar Red Spectral	

pg#1 335 Thurs - Fri

Date 1993 June 3/4 Observers [Rm] Tn / Fbt

Emulsion Batches: .....

[Time CSS 386 = 12 secs ahead] clif.fuser.in as usual

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
cc 14857 c 58	Comp/Stellar HARTMAN			0029			clear	FcAr	30/40
59	~~Comp~~ BIAS(4)						"	"	~~80~~
14860	Comp						clear	FcAr	80
861	HD 203156	21 15 23	+37 49	00 46 44		03 52W			45/5
862	Comp						clear	FcAr	80s
863 865	FLATS x 3	"	"				Ap=~~8~~ 2½	TUNG	7sec
866	Comp						clear	FcAr	80s
867	HD 162714	17 47 17	-06 07 12	01 09 06		0003E			432
868	Comp						clear	FcAr	80s
869	Comp						"	"	"
870	HD 173297	18 39 20	-20 45 00	01 24 22		0022E			1515
871	Comp						clear	FcAr	80s
872	Comp						"	"	"
873	HD 171232	18 28 30	+25 25	01 56 49					830
874	Comp						clear	FcAr	80s
875	BIAS (4)								

Spectr. Temp. ..... Dome Temp./Hum. +11.5°C ... 59% Transparency Conditions ... Clearing ... 336

Focus ... 6.76 ...

Spectr. Temp. ..... Dome Temp./Hum. +9.5°C 65% 90 CGain

CCD T → -100° Temp dump by '00 35

Exp. Mtr.	Seeing	Inc. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	1800/mm 5910 *	25μ dekta	6400Å	3ci 4ci		Raw 512 ± 3 pixels Red *Actual ∠ 55.1°	
								1ci			
								5ci			
6300	5"	5.8 -5.9	F2					6ci	Rm pgm	1.566 Air mass	
								5ci			
								2ci		MAX = 11.1 KHDU	
								3ci	sp control failed after comp		
4250	5"	6.15	G01b		52 k photons above bkgnd		S/N = 230/1	7ci	Rm pgm	grating was disabled however	
								4ci		ci: Comps should be OK	
								6ci			
3110	8"+	7.48	G01b					8ci	Rm pgm	2.363 Air mass	
								9ci			
								10ci			
3000	4"-6"	7.73	G81II					11ci	Std vel		
								10ci			
								5ci			

P942 337

Date 1993 June 3/4 Observers [Rn] To./Fbr

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
ABCD Fm000501	EF HD171232	18 28 30	+25 25					"N" mode	
CC14876	Comp						clear	FeAr	8s
77	HD177724	19 00 49	+13 43	022558					24s
78	Comp						clear	FeAr	80s
79	Comp						"	"	80s
80	HD198726	20 47 13	+27 52 30	023547		01 37E			30s
81	Comp						clear	FeAr	8s
82	Comp						"	"	"
83	HD 214975	22 36 55	+56 18 24	024844					176s
84	Comp						clear	FeAr	80s
85	BIAS(4)								
86 87 88	FLATS x 3	"	"				Ap=1/2	TUNG	7s
89	Comp						clear	FeAr	80s
90	HD 204867	21 36 18	-06 01	032645		01 27E			41s
91	Comp								

Spectr. Temp. ..... Dome Temp./Hum. +9.5°C 65.0%H Transparency Conditions ... sl. hazy .....

Focus ... 6.76 .....

Spectr. Temp. ..... Dome Temp./Hum. 8.7 69%

No FANS on Tonight as it should be.

Exp. Mtr.	Seeing	Pg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
'		7.73	G8III		above no dector	250u	IIa-J (ie stock of SI)	N 1)	Seeing Test	Dome SW, Light NW wind	
								10c			
12,800		2.99	AOV					12c.	Telluric Std,	34005 Max	
								13c			
								14c			
4610		5.75	GOIb					15c	Rm pgm		
								16c			
								16			
3100	6"	8.40	GOIb					17c	Rm pgm		
								18c			
								2c			
								19c			
5400	8"	2.91	GOIb					20c	stdvel		
								21c			

pg # 339

Date 1993 June 4/5 Observers [BH] Fbr /T.h

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp
CC14 892 93	Focus Comp/ Stellar Hartmann			2:20 28			Ap 1/8	FeNe	5s
94	Bias (4)								
95	Comp						Ap 1/8	FeNe	5s
96	HD87901	100303	122722	20 24 29					13s
97	Comp						1/8	FeNe	5s
98	Comp						"	"	5
99	SN1993J	09 47 10	+69 29 31	20 49 26		03 54W			1,351
CC14900	" Repeat	"	"	21 12 21					857
01	Comp						Ap = 1/8	FeNe	5s
02 ~~04~~	~~FLATS x 3~~	FLAT without ORD Sep Filter + ~~OG 560 Filter~~					Ap = 1/4	TUNG	4s
03 05		FLATS x 3 with OG 560 filter					"	"	4s
06	BIAS (4)								
07	Comp					ORDER SEP FILTER BG39	clear	FeNe	60
08	HD124897	14 11 06	19 42.	22 19 43		BG39 in Stellar Beam			105
09	"	"	"	22 22 47					1077

Spectr. Temp. ..... Dome Temp./Hum. +13.8°C 52% Transparency Conditions . Thin cloud 340

Focus . . 6:90 . . for . 150 ln. grating → Clouding in,

Spectr. Temp. ..... Dome Temp./Hum. +11.9°C 58%

90 CGHin CCD T → −100°C

Exp. Mtr.	Seeing	Rg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	150 ln/mm G:3415	350μ clocked	6563Å	1 ci 2 ci	focus	CCD FMT 510 0 50 1024 41	
									[Stellar Beam with ORER Sep filter OG560]		
2500		1.36	B7 V					4ci	Tellaric Std		
										Sky still Sl Bright	
61		≈13						5ci	Sl pgm	DARK .00 00 54 Some thin cloud BIAS .00 00 12	
30								6ci	"	1.264 AIR MASS Sl more clear and dark	
								7ci		Thick CLOUD at END	
								8ci			
								9ci			
								1ci		Dome T = +12.4°C	
	Set 6.85			CASS CCD	1200 ln/mm G=5080	250μ clocked	3940Å	3ci	New CCD FMT 430 0 50 1024 41		
90 000		−0.04	K0 III					4ci	Std program.		
400 000		B=1.19						4ci		some cloud 6.6K 400 MAX	

pg #2 341

Date 1993 June 4/5 Observers [Sr+] Fbr/Tn

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp
CC14910	Comp					BG39	Back in	FeNe Clear	60s
CC14911 → 913	FLATS x3					" "	Clear	TUNG	50s
914	BIAS(4)								
915 916	Comp/Stellar	HARTMAN Comps		2255		GG39	Clear	FeNe	60/70

Spectr. Temp. ..... Dome Temp./Hum. +11.6 54.2% Transparency Conditions ..Cloudy 342

Focus ....6.85.....

Spectr. Temp. ..... Dome Temp./Hum. ..... Climbing

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	~~Emulsion~~	P.H.	Program	Remarks	Quality
				CASS CCD	1200l/mm G 5080	25μ d.c.reg	3940A	3c;			
				Actuv/Grat <	47.6°			5c;		MAX 12 K ADU/pixel	
								1c;			
									Focus Test	@ Row #630, Stellar 2.2pix Rad	

pg#1 343

Date 1993 June 7/8 Observers Hay/Tn

0.48 -0.93 NaD pg#4

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
14917	BIAS(4)								
8	Comp						clear	FeAr	60
14919	HD177724	19 00 49	+13 43	00 07 12					213s
20	"	"	"	00 11 26					180s
21	COMP							FeAr Clear	60s
22 24	FLATS X3							Tung A=1/2	12
14925	BIAS(4)								
26	FLAT						Ap 1/2	Tung	12
27	Comp						clear	FeAr	60s
28	HD 150484	16h 36.m2	+0° 41'	00 25 56					650s
29	"			37 06		00 56W			"
30	"			48 16					"
31	"			59 47					"
32	"			01 10 55		01 30W			"
33	BIAS(4)								

Spectr. Temp. ..... Dome Temp./Hum. +16°C ..... 75% Transparency Conditions . Hazy ... s/ cloudy 344

Focus ... 6.75 .....

Popup complete by 2330

Spectr. Temp. ..... Dome Temp./Hum. .....

C LAMBDA 90 C GAIN CCD T → −100°C

Exp. Mtr.	Seeing	Rtg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	1800 l/mm G5530	250 decker	5880		480	0 50 1024 4 1 CCD FLAT	
39200		2.99						5 ci	Telluric Std	15 K	
32700								6 ci		10 K	
								7 ci			
								8 ci		14745 ADU 14667 14636	
								9 ci			
								10 ci			
710	3"	8.34 −8.84	G5V K5V?					11 ci	Hdg pgm		
390								"		incr cloud	
470								11 ci		1.408 Air Mass 0042	
520								12 ci			
								12 ci			

pg #2 345

Date 1993 June 7/8 Observers Hdg / Tu

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC14934	Comp						clear	FeAr	60s
35	FLAT						Ap 1/2	TUNG	11s
36	HD 150484	16 36 02	+00 41	01 25 32					650s
37	"			01 36 42					"
38	"			01 47 52					"
39	"			01 59 17					"
40	"			02 10 27					"
CC14941	BIAS(4); CC14942 FLAT; CC14943 Comp.						Ap 1/2 Clear	TUNG FEAR	11s 60s
CC14944	HD150 484			02 25 05					650s
45	"			02 36 15					"
46	"			02 47 25					"
47	"			02 58 39					"
48	"			03 09 49					"
49	BIAS(4); CC14950 Comp; CC14951 FLAT						Clear Ap 1/2	FeAr TUNG	60s 11s
52	Comp	for HD 177724							60s

Spectr. Temp. ..... Dome Temp./Hum. +14.8°C 78% Transparency Conditions Hazy 346

Focus 6.75

Spectr. Temp. ..... Dome Temp./Hum. ..... c LAMBDA

Exp. Mtr.	Seeing	Pig. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	~~Emulsion~~	P.H.	Program	Remarks	Quality
		8.34 -8.84			1800 l/mm G-5530	250u	5880Å				
										13K max	
726									Hdy pgm		
678											
716											
640	4"										
								14ci			
								15 16ci			
630								17ci	Hdy pgm		
610	4"-5"										
530								~~17ci~~			
330											
180								17ci		cloud now	
								18 19			
								18c			

347
By 3

Date 1993 June 7/8 Observers Hdy. I.T.q.

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
Cc14953	HD177724	190049	+1343	03 2831					496
54	"			3703					392
55	~~BIAS~~ Comp						clear	Fe/AR	60s
56-8	FLATS x3						Ap 1/2	JUNG	11s
59	BIAS (4)								

Spectr. Temp. ..... Dome Temp./Hum. +13°C 84% Transparency Conditions ... Clouding in 3.4θ

Focus ... 6.75 .....

Spectr. Temp. ..... Dome Temp./Hum. +13.5°C 83%

Exp. Mtr.	Seeing	Pg Mag.	Sp.	Inst.	Grating/ Tilt	Slit	~~Emulsion~~	P.H.	Program	Remarks	Quality
25K		299			1800 l/mm G-5530	250	5880A	~~5C~~ ~~20~~	Telluric	MAR 9K HDY	
25K								5C	"		
								10C			
								20C		12-64	
								1C			

pg#1 349 Thurs Fri

0.01 – 0.56 Hα

Emulsion Batches: .....

Date 1993 JUNE 10/11 Observers Hdg / Tu

CSS 386 18 secs ahead of WWV Time

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC14960 61	Focus								
62	BIAS(4)								
63 64-66	Comp, [FLATS x 3		Tung, Ap = 1/2	5 secs.			Clear	FeAr	80s
CC14967	HD 87901	10 03 03	+12 27 22	20 45 17		03 29 W			78
68	"			47 49					
69	Comp	Note 1993 coords		(16 40 57)	(00 30)	in case encoder Fail again.	Clear	FeAr	80s
14970-2	COMP / FLAT CC14971, / BIAS CC14972						Ap = 1/2	FeAr Tung	60s 65sec
73	HD 150484	16 36 12	+00 41 00	21 13 32					650s
74	"			21 24 58					650s
75	"			21 36 18					650s
76	"			21 47 20					650s
77	"			21 58 21					
78-80	COMP / FLAT / BIAS(4)								80s/5s
81	HD 150484			22 13 42					650s
82	"			22 24 52					
83	"			22 36 02					

Spectr. Temp. ..... Dome Temp./Hum. 14.5°C 67% Transparency Conditions ... PART. Cloudy 350

Focus ... 6.67 ..... FANS on, Dome open by 1950

Spectr. Temp. ..... Dome Temp./Hum. ..... CLAMBOX No encoders tonight

Exp. Mtr.	Seeing	Pg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	~~Emulsion~~	P.H.	Program	Remarks CCDFWTT 480 0 50 10244 1	Quality
				CASS CCD	1800 lines/mm G-6025	250μ decker	6563Å	3ci 4ci		Richter @ Row 330	
								1ci			
~~35~~								5ci			
35K		1.36	B7V					~~7ci~~	Telluric Std.	MAX 13K ADU	
								7ci	" "		
								8ci			
515		8.34 - 8.84	G2V + F9V								
535								10ci			
——?								11ci			
450											
——?											
538											
500											
560											

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pg #2

Date 1993 June 10/11 Observers Holy / Tn

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
84	HD 150484			22 47 24					650s
85	"			22 58 34					
86-8	BIAS(4) / COMP / FLAT								80s/60s
89	HD 150484			23 16 45					650s
90	"			2755					"
91	"			3932					"
92	"			5042					"
93	"			00 01 51		0031W			"
94-96	BIAS(4) / FLAT / Comp						TUNG FEAT	Ap 1/2 Clear	6 sec 80 secs
97	HD 150484	16 3612	+00 41	00 1715					650s
98				2825					"
99				3936					"
CC15000				5052					"
1				01 02 02					"
02 -04	Comp / FLAT / BIAS(4)						Clear FeAr Ap 1/2 TUNG	~~Ap 1/2~~ Cl	80s

Spectr. Temp. ..... Dome Temp./Hum. 16.8°C ..... 75% Transparency Conditions .. Part. Cloudy 352

Focus ..... 6.67 ..... ie where this star is

Spectr. Temp. ..... Dome Temp./Hum. .....

c LAMBDA

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	~~Emulsion~~	P.H.	Program	Remarks	Quality
515				CASS CCD	1800 l/mm G=6025	2 Pix darker	6563Å		Poly pgm		
426											
~~485~~											
485	4"							17ci			
795								17ci		clear again 1.376 AIRMASS	
875	3"							18			
875											
940								18ci			
								19ci 5ci	Flat	Dome T = +16.7°C	
960	3"										
992											
882								20ci			
860											
833											

353
Part 3

Emulsion Batches: .....

Date 1993 June 10/11... Observers . Hdy. / Tq .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
CC15005	HD150484	16 36 12	+00 41	01 16 53					650s
06				28 03					650s
07				39 13					"
08				50 53					"
09				02 02 03					"
10-2	FLAT / COMP / BIAS(4)						TUNG comp	Ap 1/2 Clear	6s 80s
13	HD150484			02 17 09		02 47 W			650s
14				28 20					"
15				39 29					"
16				02 51 02					"
17				03 02 12					"
18 →20	BIAS / comp / FLAT						FeAr TUNG	Clear Ap 1/2	80s 6s
21	Comp						FeAr	Clear	80s
22	HD177724	19 00 49	+13 43	03 22 26					145
23				03 25 37					153
24	COMP								

Spectr. Temp. ..... Dome Temp./Hum. +15.5°C 79% Transparency Conditions ... s/hazy 354

Focus ... 6.67 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

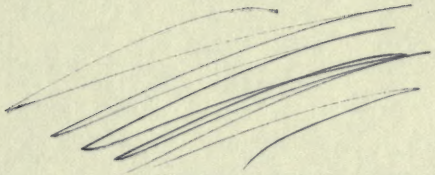
Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
760					1800 G6025		6563Å		Hdlg pgm		
704										SLOPPY GUIDING	
710	4"									CCDT = -101.7°C	
625											
531											
										CCDT = -101.7°C	
500											
440											
435										CCDT = -101.7°C	
380											
385	6"										
30000		2.99							Telluric Std	9380 APM	
11									" "	6000 APM	

355 4

Date 1993 June 10/11 Observers Hdy Tm

Emulsion Batches:
Dome T at end +14.4°C
Hum at end 50.4%

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Ex
CC15025 27	FLATS x3						Ap 1/2	TUNG	6s
26	BIAS(4)								
	T_{CCD} = -94°C 03:50 EST				All to Perseus & WORK				
	Seeing test								
FM00502 ABCD EF HD 201750		21 06 30	+36 24	☆ 3 38		☆ 0U30E		"N" mode	

FANS on All night.

55x55 pixels 4x67 ms Int + 2x133 ms Dome SW, no wind at all